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# iPhone 6s

*Hands-on with the all-new*

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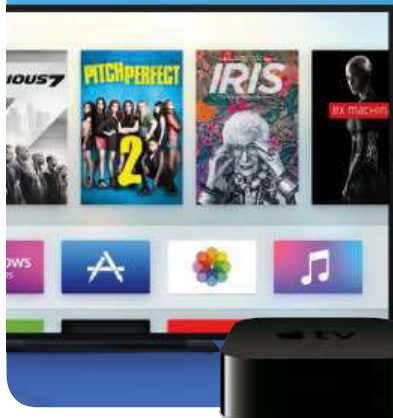
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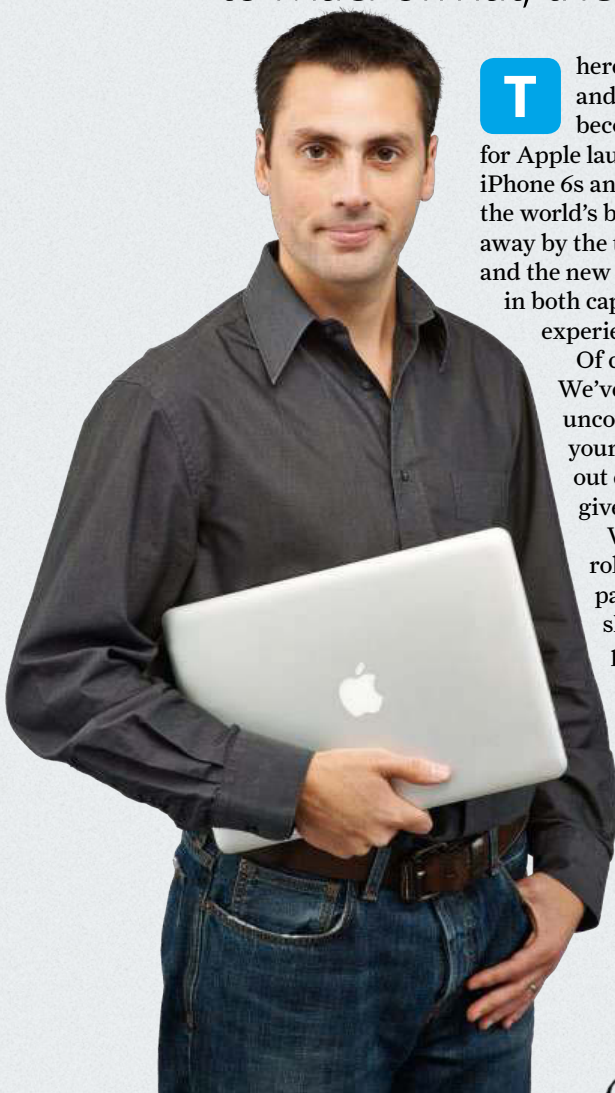




# Welcome

**NEXT  
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27 Oct

to MacFormat, the UK's best-selling Apple magazine



**T**here's always a big buzz around September and October for Apple fans. They have become the biggest months in the calendar for Apple launches, and the incredible features of the iPhone 6s and 6s Plus once again cement Apple's as the world's best smartphones. We were equally blown away by the tech inside the iPad Pro and its Pencil, and the new Apple TV looks to finally come of age in both capabilities and content. Our hands-on experience of the new devices is over on page 6.

Of course, it's also finally time for iOS 9. We've been busy using the betas for months, uncovering the exciting new ways you can use your iPhone and iPad more efficiently. Find out exactly how your iOS device has been given a free refresh on page 26.

We've also recently seen the full UK rollout of Apple Pay, Apple's contactless payment system. Our guide on page 76 shows where and how to use it. Talking of paying, if you started your free Apple Music trial when the service launched you'll now be paying for it every month. Turn to page 45 to solve some of the small issues that are still going on.

Also, to keep your Mac in tip-top condition, turn to page 40 to wise up on the best Mac monitoring tools.



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Plus our team of expert writers and designers all over the world, who help make *MacFormat* number one!

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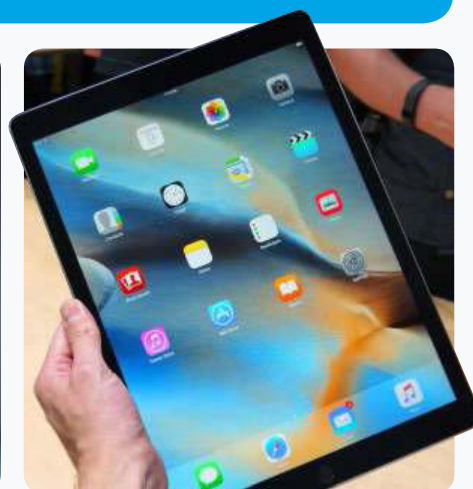
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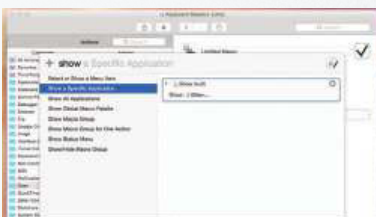
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# Apple's brave new world

**We dispatched Gareth Beavis from our sister site TechRadar to try out Apple's new devices**

**T**he eyes of the tech world once again fell on an Apple event in September, where the company showed us its latest iPhones. The 6s and 6s Plus were hotly tipped to introduce a Force Touch-like interface (which Apple called 3D Touch), and big camera improvements. As ever, Apple had other things up its sleeve.

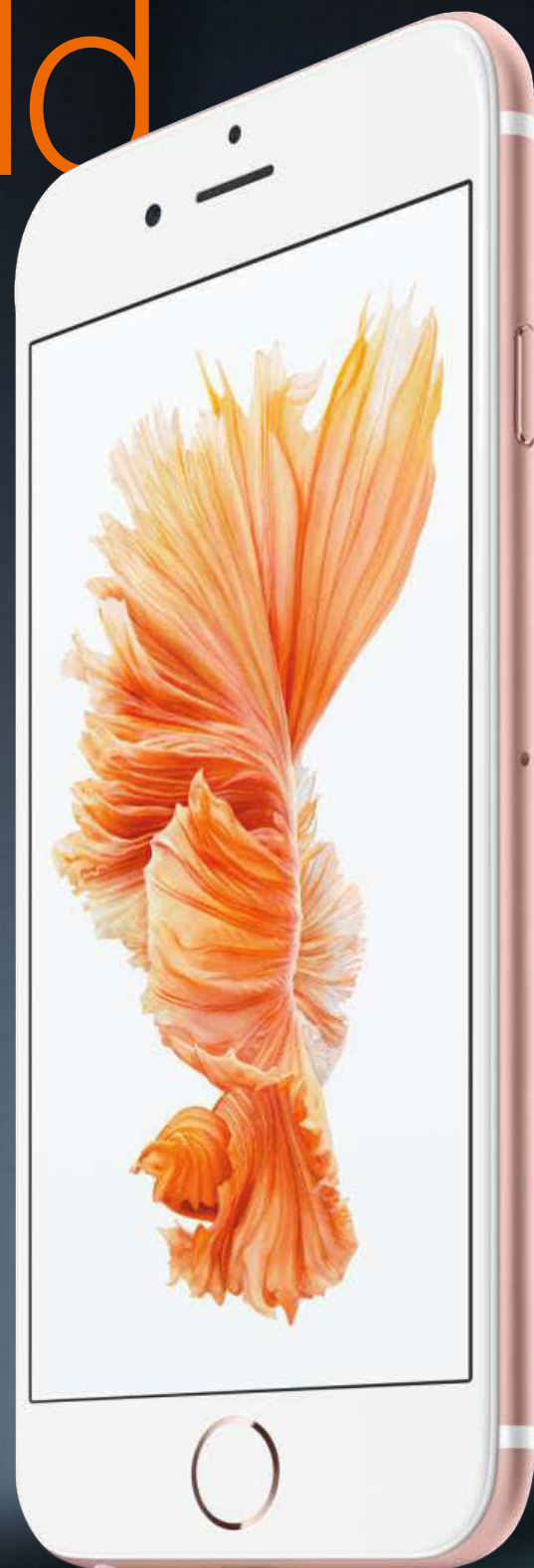
Perhaps the biggest wow factor came from the iPad Pro. The audience at the Bill Graham Civic Auditorium in San Francisco was stunned by Apple's powerful and larger tablet, which seeks to inject new life into a declining iPad market. It wasn't just the huge screen space (12.9 inches) and 2732x2048 resolution that whetted our appetites, but the introduction of a Smart Keyboard and stylus, which Apple, in a

typically understated way, called Pencil. iPad Pro bridges the gap between iPad Air and MacBook, and it's a truly exciting product that's likely to see huge interest from developers creating touchscreen apps that would previously have been in the realm of more powerful desktop machines.

Apple also showed off new Apple Watch models and bands which are available right now, just in time for watchOS 2.

We weren't left short on the Apple TV rumours though, and it turned out to be a big upgrade to Apple's little black box. It now has its own App Store for apps and games, and comes with a Siri Remote for improved control and gaming fun!

Read on to find out exactly what we thought of the new iPhones, iPad Pro and the fourth-generation Apple TV.



The giant iPad Pro comes in the same three finishes as the iPad Air and mini: Gold, Silver and Space Grey.





# Hands-on with iPhone 6s and 6s Plus

With these iPhones, your eyes aren't deceiving you, but your fingers are

**T**he iPhones 3GS, 4S and 5s were all rather dull compared to the phones that launched in the years either side of them. That's

because there's usually very little difference in the 's' models from their predecessors, making it hard to get excited about them.

This time around it's a little different: the 6s is a great upgrade for those 'stuck' on a 5s, and it's a decent phone in its own right. If you're ready for an upgrade from the old design and keen to stick with Apple, this is a great time to go for it.

## Design

The same stick that some use to beat iPhone fans still exists: yes, the 6s and 6s Plus look almost identical to last year's models, with the same ceramic feel and slightly protruding camera; placed side by side with that model, you won't really notice the difference. The only marginal change is the additional thickness, likely to facilitate the new 3D Touch technology and hopefully a larger battery, although there's no word on that from Apple.

Compared to other phones available, the latest iPhones still manage to mix that

feeling of premium build with a light and thin body that's a joy to hold. Apple's nod to the improved build as having reinforced 7000 Series aluminium is clearly a direct result of the iPhone 6's 'Bendgate' controversy, where some believed the phone was slightly prone to changing shape if pressure was applied. Though Apple doesn't need sympathy, it was still a bit harsh that it got singled out for this when many other handsets could also bend if you tried hard enough. Either way it's now much less prone to bending.

Of course, the 6s Plus needs a bigger battery than the 6s, but the 5.5-inch display feels so much more swamped by the iPhone's frame compared to other phones, such as LG's G4. Apple's largest phone is still very light and easy to hold, but you can't forget it's a phablet. If you're coming at this from the iPhone 5s, you're going to be blown away by how gargantuan it is to hold, and even Reachability (double-clicking the Home button to bring the top of the screen down within reach) doesn't really help. However, you're buying a phablet, not a mini phone, and the bigger screen and battery that such a phone offers – and that comes with compromises.

The reinforced 7000 Series aluminium is clearly a direct result of the iPhone 6's Bendgate controversy

## 3D Touch, but the same screen

Now onto the biggest change in this year's iPhone: 3D Touch. This changes everything about using iOS, and while it's not enough of a reason to upgrade from the previous

## Apple event

model, it is a pretty nifty trick that promises to make iPhone 5s owners feel like they're getting a real upgrade with their new phone.

The main difference it brings is the ability to interact with on-screen elements in different ways. It's too early to delve into all the ways that it will work, but it's simple: you can tap like before, but press a bit harder on an icon or a message and a new menu will pop up. Imagine it's like right-clicking with a mouse to get a contextual menu and you're pretty much there. It's a cool new feature, although one that app developers will need to work with for a while to really get the best out of it.

The main barrier is remembering that the option is there – the act of tapping on a touchscreen to make things happen is so ingrained in most people's consciousness that it's hard to remember there's a 'secret door' to some things. It'll be intriguing to see how Apple deals with that. When you remember, it works nicely, and the Taptic Engine underneath buzzes pleasantly to confirm an action is successful.

The screen, new touchy-powers aside, is pretty much identical to the one seen on the iPhone 6. That's not necessarily a bad thing. While it's true that Apple has one of the lowest resolution screens of all the flagship phones, the way it's displayed (laminated to the glass, highly colourful) means it looks beautiful nonetheless.

The 6s Plus retains the previous model's 1080p resolution. With other phone makers trending towards QHD displays (Sony even has a 4K phone display), content to show on them is still sparse. They improve the image, and it would've been nice to see Apple do something cool here, but given how fragile iPhone batteries are, this possibly isn't the best idea.

### Camera

The anticipated upgrade of the iPhone's camera has arrived: both new iPhones have a 12MP snapper and it looks like it'll deliver in spades. The need to jump in megapixels is rarely warranted beyond the need to impress with higher numbers, but this year things are starting to jump forward. The Samsung Galaxy S6 takes stunning photos with its 16MP camera, and

Sony's Xperia Z5, packing a 23MP sensor and super-fast autofocus, actually puts its additional pixels to good use. Apple needed to keep up.

Just 12MP might not sound like a lot, but it means that the shutter speed is faster than ever, the clarity looks crystal clear on the larger 5.5-inch screen of the 6s Plus, and the iPhone's overall photography quality is improved once more. Apple must have spent a *lot* of money on its 'Shot on iPhone 6' campaign last year, and if this phone can outdo those snaps (and there's no reason to say it can't), then it will have a promising camera on a good phone.

While we've only tested the new camera briefly, there's no doubt that it's an upgrade. It retains the speed of snapping we've come to expect from an iPhone, while the clarity is there to see too. The useful features available in previous iPhones are also still present. Apple still hasn't fixed the most annoying part of the camera – sliding a finger up and down to change the exposure as the only way of altering the photo, which is basic and actually quite hard to do; we had hoped to see a manual control.

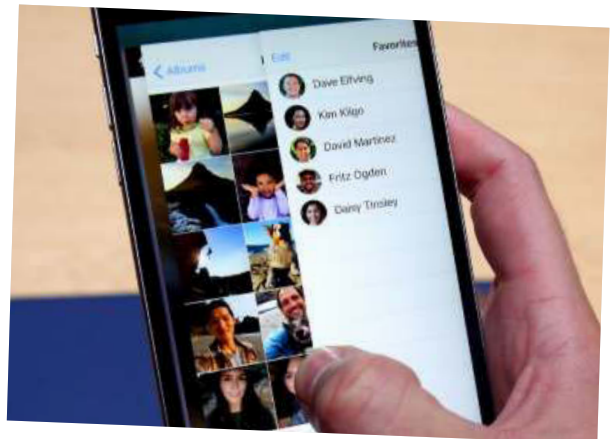
The new Live Photo option takes a 1.5-second video either side of a photo to bring a kind of Harry Potter element to things. That's cool, but it also feels more like a gimmick than a really useful option. What's really impressive is that it doesn't seem to affect the shutter speed – it should take a



On top of 3D Touch's shortcuts to help you get things done more quickly, the new iPhones ship with iOS 9, of course, and so benefit from all of its new features.

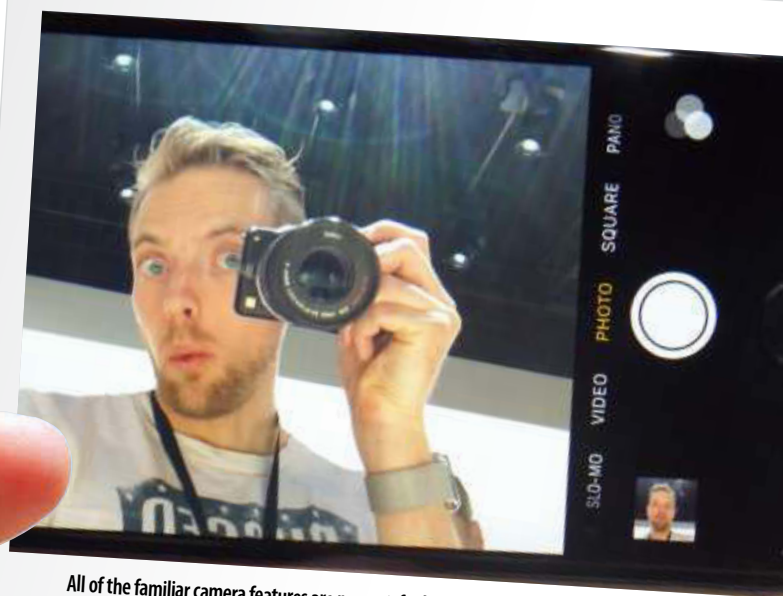
You'll struggle to tell the the new iPhones and last year's models apart; the new ones' dimensions are 0.2mm thicker at most.

Live Photos bring a kind of Harry Potter element to things, which is cool, but it feels like a gimmick rather than useful



3D Touch introduces a new shortcut to open the App Switcher – a press on the left side of the screen. However, this seems to only work from the Home screen.





*All of the familiar camera features are present, for better or worse. They're joined by Live Photos, but you need to remember to perform a deep press to capture one of those.*

of its predecessor (though, as ever, this is unconfirmed by Apple), with 2GB now powering your apps and creating a decent snap under the finger. It might not seem like much of an upgrade, but we expect it to blitz the iPhone 6 and especially the 5s in speed tests.

### Early verdict

This is the most impressive 's' variant of an iPhone we've seen yet, and one 5s owners will flock to. While it's disappointing that Apple 'gets away' with releasing the same phone visually – no other brand could do that – this is the fourth time it has done so, and people still like buying iPhones. If the iPhone were to have a new frame, then this would be a brilliant new phone without exception. The new 3D Touch, upgraded camera and improved speeds offer tangible benefits, and combined with the solid upgrade to iOS 9 and the impressive build, Apple has made a very good phone.

If you've got an iPhone 6 or 6 Plus already, there's less incentive to get a 6s model. For anyone on an older iPhone, or thinking of defecting from Android, the 6s and 6s Plus are worth checking out. Both new iPhones are obviously going to command a high price, and it's up to you whether the 3D Touch technology and upgraded camera are enough to

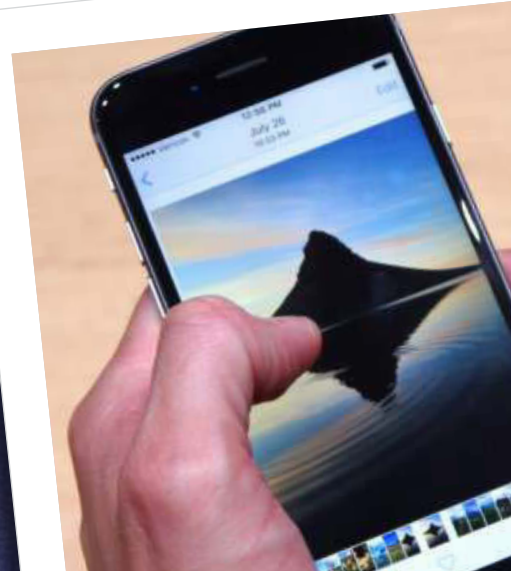
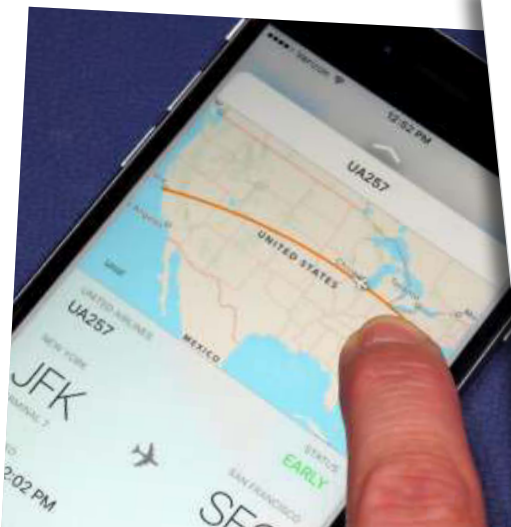
keep you from buying last year's cheaper model. But, apart from being so similar in design, this feels like quite an upgrade from Apple.

**3D Touch introduces two new gestures. A light press on an item such as an email or a photo 'peeks' at its content. Let go and you're returned to the previous view. Pressing deeper 'pops' an item open.**

while either side, but it buffers while you're taking a shot. Live Photos will be more a 'remembered delight' rather than something you aim to do with your pictures. It's something you'll need to remember to '3D Touch' in order to enable.

### An A9 chip and upgraded RAM

As usual, Apple has thrown in an upgraded chip in the shape of the A9, which brings a number of changes. The battery will last longer, the device will run faster and the gaming experience will, once again, be better than anything we've seen before. Once again, it's a 64-bit architecture, though that still isn't used to its full potential to address 4GB of RAM; word is that the 6s has double the RAM





# Hands-on with iPad Pro

Following in the iPhone's footsteps, the iPad just got a lot bigger – but is it comfortable, and how does Apple's Pencil stack up to graphics tablets?

**T**he iPad Pro is the device we thought we'd never see – it's Apple finally taking on the enterprise market, but like with its MacBook range, the new, larger iPad makes non-business folk thinking about whether they'd fancy one too.

The reason is simple: this thing has got a massive 12.9-inch screen with an impressive resolution of 2732x2048 pixels and a bunch of fancy new tricks that, combined with iOS, offers a really compelling experience. The main thing you'll notice is that it is, well, huge. Really big in the hand, to the point of feeling like you might be able to defend yourself from an attack if you're holding it the right way.

## Design

The iPad Pro is a little hefty at 713g, but that doesn't tell the whole story. This is a tablet with a brilliant screen, powerful speakers and a great accessory ecosystem. We can't help but feel that Steve Jobs would have had something to say about the Apple Pencil, which allows you to annotate and sketch among other things, but if you've watched Adobe's demo, laying out magazine pages, you'll understand it.

The iPad Pro might sound like it's designed for the enterprise sector, but it's just a really decent work tool fused with a top-of-the-range tablet. With no new iPad Air on offer this year, this is Apple's most advanced iPad, and so it has to be seen as much a consumer item as anything else.

It's clear iOS 9's split-screen view was made for the iPad Pro, as there's so much that you can do with that screen real estate. It's infuriating when companies show a tablet's power by shrinking a movie to the size of a stamp so you can do other

things in the background, but again Apple's done it. However, this isn't a new trick – the Samsung Galaxy S3 could do it in 2012.

The split-screen view is good because most of the time it's not proper split screen, and that's the right thing to do. This is still a



The iPad Pro is huge, and running two full-size apps is appealing. It feels like it'll be as good for entertainment as it will be for business use.



The Apple Pencil's Lightning connector is longer than others so you can top up its charge even when the iPad Pro is in a case.

We can't help but feel that Steve Jobs would have had something to say about the Apple Pencil

tablet, not a laptop replacement, so you don't need a million windows open at once. Keeping an eye on news while using Excel is good when it's just a column slid in to the right.

## Pencil and Smart Keyboard

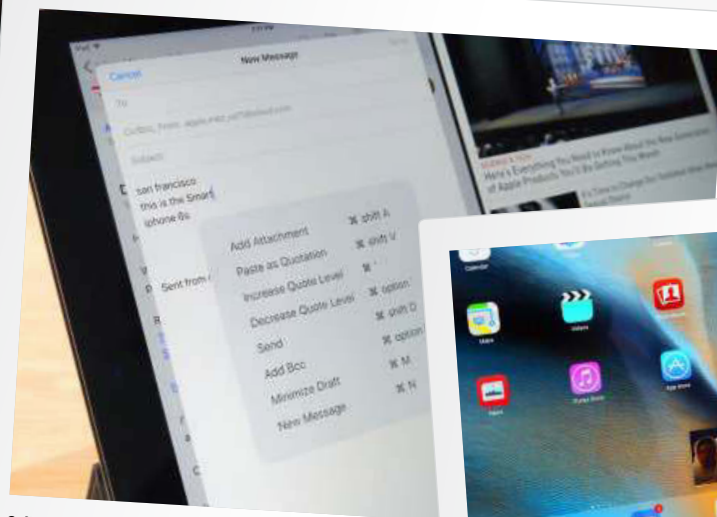
The upshot of the iPad Pro is that it's fantastically powerful, and can do pretty much anything offered by app developers today. From hi-res graphics to pressure levels from the Apple Pencil... it's all well within its capabilities.

The Pencil is an odd thing to have added in. It's very good at sketching – one of the best we've tried when it comes to

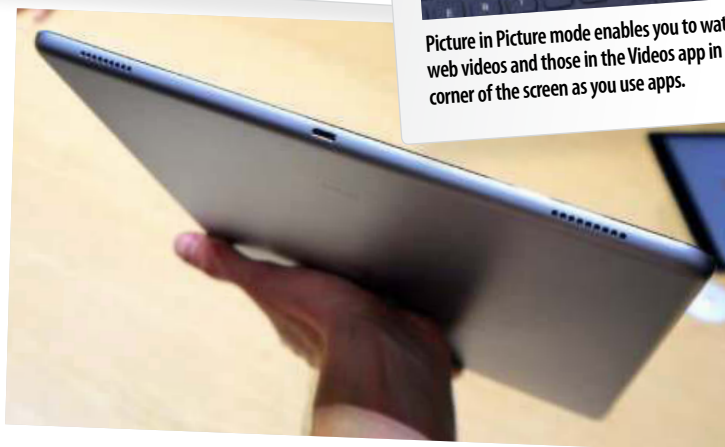




Split View is a revelation on the iPad Pro as the screen is large enough to show two full-size iPad apps (in portrait) side by side when the device is in landscape orientation.



Picture in Picture mode enables you to watch web videos and those in the Videos app in the corner of the screen as you use apps.



The iPad Pro uses a Lightning connector, thankfully, rather than confusing the iOS range with USB-C.

rubber-clad. You think you haven't hit the spacebar and a few letters, then you check to see it's all been registered perfectly.

It's similar to the new MacBook's keyboard, where the travel doesn't feel traditional, but still works really well. Its magnetic dock works great as a cover, and the Smart Connector could bring good things to the aftermarket as it can send power and data to the device from the cover. Even with so many pixels, battery life is apparently iPad Air-like, which is impressive.

### Early verdict

The iPad Pro is a large beast, no doubt, but it takes the Air's endearing stylings and creates something that straddles business and leisure. Apple will hope it will be a revelation to its brand like the Surface 3 has been to Microsoft. A lot will depend on cost, but given Apple's clever software tweaks and accessories, there's a lot to be intrigued by. Whether that converts to sales remains to be seen. It's almost a shame that it likely won't enjoy iPhone-level sales, as developers might not rush to make apps for it. While Tim Cook was quick to point out the alliance with IBM and Cisco, this feels more like a consumer device. We can see it being perfect for leafing through papers or comics on a lazy Sunday, or as a replacement for watching Netflix in bed using a laptop. It's not even that expensive... which feels odd to say about an Apple product.

The Apple Pencil is reckoned to take 15 seconds to build up a 30-minute charge.



handwriting recognition – and it didn't get confused by a fist rubbing the screen at the same time. But for \$99 (around £64), it's a costly add-on to an already expensive tablet. However, the ability to shade, annotate and more is really impressive, and the response from the iPad Pro is perfect.

The Smart Keyboard is also nifty. While it's expensive, the keys have a very accurate travel despite feeling



# The new Apple TV

Apple's little black box looks set to finally move from being a hobby to a compelling platform for apps and games

**A**t long last, Apple has unveiled its fourth-generation Apple TV with the feature we've been clamouring for: apps and games. The device is at long last growing up – literally so in the case of its body, which is the same width and depth as before, but 12mm taller.

Yet Tim Cook's proclamation that "The future of TV is apps" sounded a little bit blind to what the world has been doing with games consoles and some other set-top boxes for years. But apps and games aren't the whole picture.

The special sauce in this new TV experience lies in the accompanying Siri Remote. It's a similar size and shape to the old aluminium one, but with six buttons clustered around its middle. Below them the body is glossy, and above there's a different finish that tips you off that there's something different going on up there. That part

is a touch-sensitive surface that replaces the old remote's awkward ring-like directional control.

The remote communicates your input over Bluetooth 4.0, so there's no need to point it just to navigate menus. This helps to facilitate its key feature: you press a button and then speak to tell the Apple TV what you want. It ought to work better in the relative quiet of a living room than in public, and this implementation of Siri seems smart – necessarily so to justify Apple's claim of revamping the way TV works – so you can, for example, request action films and then ask it to filter results to those starring a specific actor.

## Set in motion

The Siri Remote also contains a gyroscope and an accelerometer. If that makes it sound a lot like the controller for Nintendo's original Wii console, that's exactly it; an on-stage demo at Apple's

event showed a rhythm action game, Beat Sports, using similar movements to the memorable (and nine-years-old!) Wii Sports.

A Remote Loop, sold separately, attaches to the Lightning port to stop you flinging the remote across a room. We hope it has a strong locking mechanism.

It might be some time before we see whether Apple can kickstart the legacy laid down by Nintendo, which seemed

## Specifications

**Capacities** 32GB, 64GB **Processor** A8

**Connectivity** HDMI 1.4, 802.11ac Wi-Fi with MIMO, Ethernet, Bluetooth 4.0, IR receiver, USB-C (for service only)

**Includes** Siri Remote, power lead, Lightning to USB cable (to charge remote)

**Optional extras** Remote Loop, HDMI cable

to have been thoroughly exploited by game developers over the last nine or so years. Even with some significant titles on the way, such as Ubisoft's Rayman Adventures, would-be buyers need to justify the higher cost of this Apple TV – \$149 (32GB) or \$199 (64GB), with UK prices to be confirmed. Apple TV also works with proper game controllers certified under Apple's Made for iPhone programme.

There are additional hurdles for developers to overcome. Within hours of the device's unveiling, they discovered a 200MB limit on the size of apps, with additional content having to be downloaded as needed. That might stifle games at least, or at least dent the experience of some games on slow connections.

Why is that the case when the Apple TV comes with a minimum of 32GB of storage? That's double the entry-level iPhone, which Apple excuses on the grounds of its persistent connection to the cloud. There might be an element of futureproofing, given the few Apple TV models to date, but it feels more like Apple has something else to reveal about its plans in the not-too-distant future.



The Remote Loop, sold separately, mimics Nintendo's effort to avoid broken TVs during gaming.



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# Picks from THE STORE

*We select the best apps  
& games out there*



## On our APPLE TV

What we're watching on  
the iTunes movie store



**FILM**

### Avengers: Age of Ultron

£13.99 (to buy) HD

➤ Spectacular scenes ensue when Marvel's lengthy roster of superheroes goes up against a misguided artificial intelligence that's put the fate of humanity on a knife's edge.

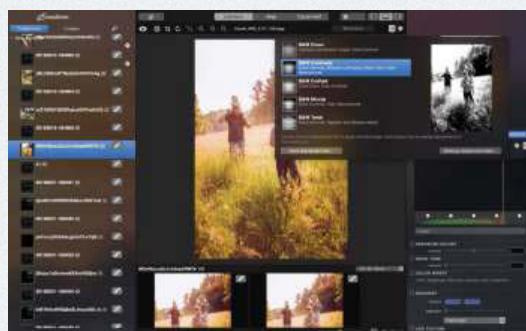


**TV**

### Inside Amy Schumer

£13.99 (HD), £2.49 per episode

➤ This risqué comedy show is even better in its second run. If you were a fan of Sarah Silverman's long gone show, this is bound to give you big belly laughs because Schumer also treats nothing as sacred.



*Emulsion looks  
like the Aperture  
replacement we've  
been looking for*

## Emulsion

**£39.99 Developer** The Escapers, [emulsionapp.com](http://emulsionapp.com)  
**Requires** OS X 10.10 or higher



We've been treated to some great Mac photography apps of late, with the likes of Affinity Photo and Tonality. Now it's the turn of photo-cataloguing apps, and this one looks the business! It's much like Adobe's Lightroom in that it can work as your default photo organiser and non-destructive image editor. Emulsion looks very much like the Aperture replacement we've been looking for. (Photos doesn't cut it for everyone when it comes to organising images.) Emulsion actually works with Aperture plug-ins too.

The app allows you to keep your images organised by collections, albums, tags, places, and people, as well as by search queries, which can look at all of the metadata and ratings attached to your pictures. It seems it's time to give your photo library a lick of paint!



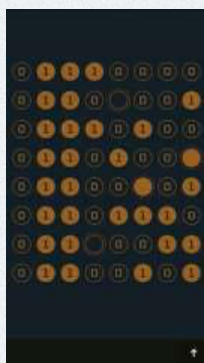


## Company of Heroes 2

**£29.99 Developer** Feral Interactive Ltd,  
www.feralinteractive.com  
**Requires** OS X 10.10.3 or higher



The original Company of Heroes was a tough, detailed and engrossing real-time strategy title from 2006. The sequel came to PC in 2013 and now it's finally on your Mac. You have to direct your troops through real-time battles in the fight to turn the tide of World War II, from Stalingrad to Berlin.



## The Guides

**£1.49 Developer** Kevin Bradford, theguidesapp.com  
**Works with** iPhone, iPod touch, iPad



You will have heard such claims before, but The Guides really is a puzzle game with a difference. There's an inherent air of mystery about it, from the lack of backstory and minimal instructions to the references to popular conspiracy topics and even a fake newspaper's website. It's a seriously tricky and fascinating experience for iOS gamers.



## Arcadia

**£2.99 Developer** Touchpress, touchpress.com  
**Works with** iPhone, iPod touch, iPad



This isn't the first time that the excellent Touchpress has departed from science, history and music to look at literature. Arcadia by Iain Pears is a far cry from The Waste Land, which was a historical analysis of T.S. Eliot's masterpiece. Arcadia is an original novel written just for iOS devices. It charts ten characters across three storylines and is similar to create-your-own-adventure apps such as Scorchery! and 80 Days. However, those are firmly on the gaming side of things, whereas Arcadia is most definitely a novel, weaving its tale of intrigue and adventure through intersecting and diverging stories, and placing all in the hands of the reader.

## On our PLAYLIST

What's on the office speakers



### MUSIC

#### Tom Misch, Beat Tape 2

**£6.99**

➤ The basslines of Tom Misch's music are firmly rooted in soul and hip hop, but there's a gentle piano melody working its way through his latest tunes. The 12 tracks are diverse but all possess Misch's trademark late night chilled sounds. This is definitely one for the eclectic music lover.



### PODCAST

#### Seriously...

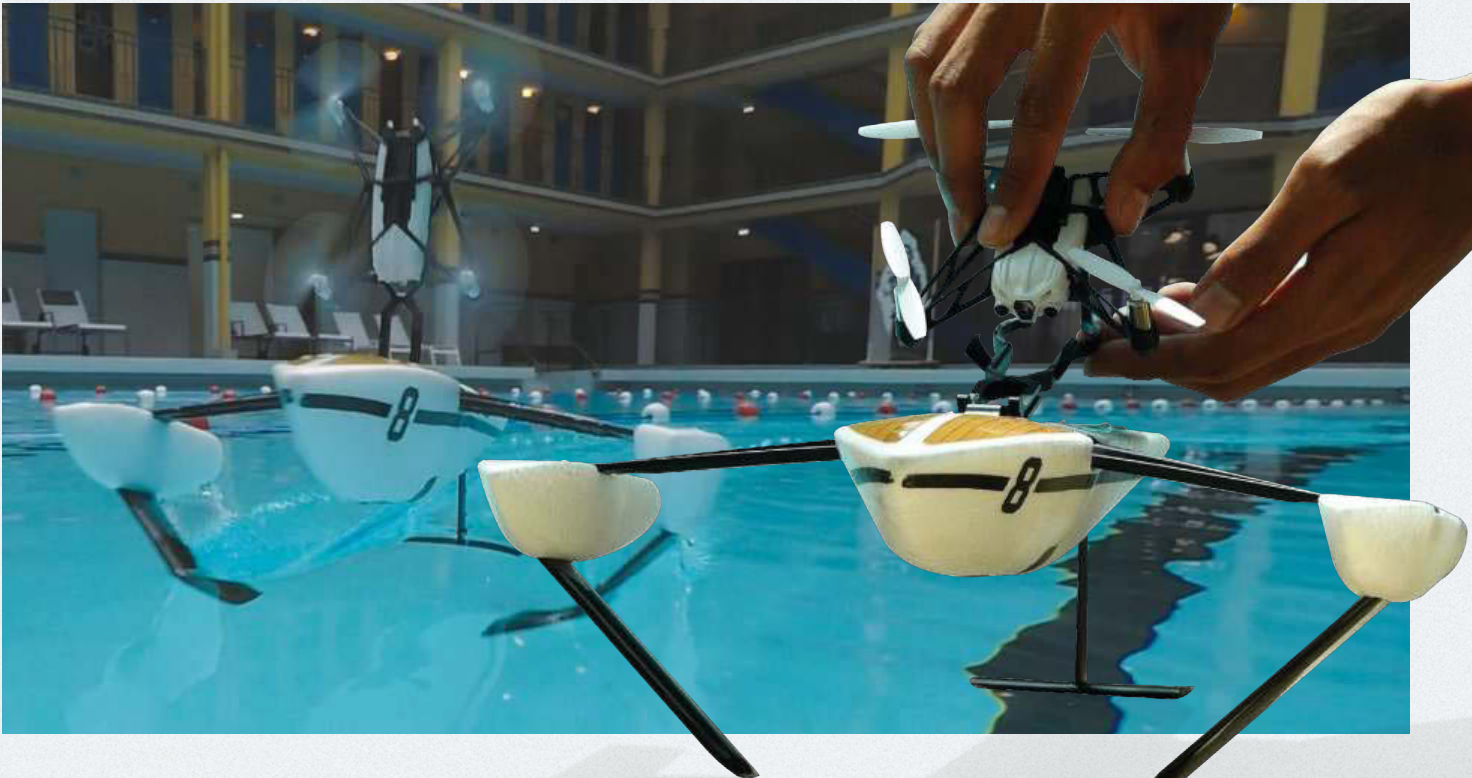
**Free**

➤ Seriously... is the BBC's replacement show for Radio 4's *Documentary of the Week*. Presented by Ashley John-Baptiste, the half-hour programmes look at a wide variety of under-the-radar topics; from the fascinating tale of the Bin Laden audio tapes that were almost wiped over, to the curious origins of timeless children's game Rock, Paper, Scissors.



# GADGETS

*Hot gear on the horizon... what's got us excited?*



**WE'RE MOST EXCITED ABOUT...**

## PARROT HYDROFOIL MINIDRONE

**£140** [parrot.com](http://parrot.com)

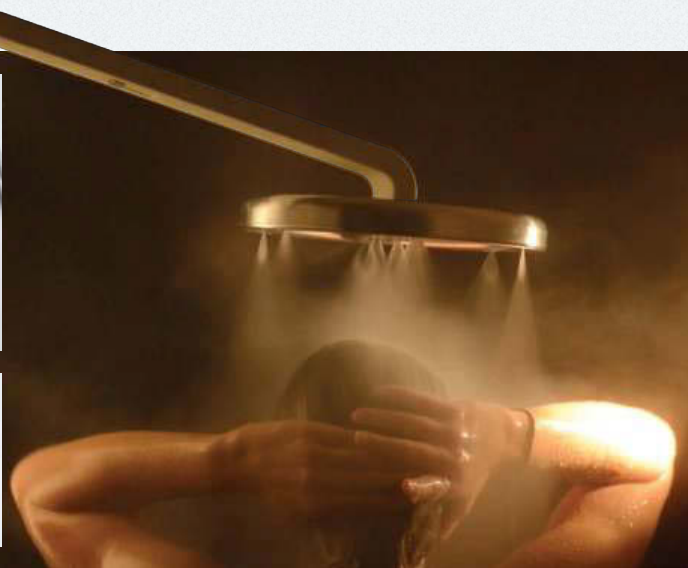
*The drone rises to form a vertical, electronic sail that powers the hydrofoil*

**↑ What is it?** The latest drone from Parrot combines a miniature drone with a hydrofoil – when the two are attached, the drone rises to form a vertical, electronic sail that powers the hydrofoil. It can then be unclipped and flown separately like a regular drone.

**When's it due?** Sailing into view right now.

**Why are we excited?** It's Parrot's first foray into the world of hydrofoils and it looks good to us. Combining aquatic and aerial electronics means you get the best of both worlds, all at a much more affordable price than most drones. We're looking forward to seeing where Parrot takes this line next.





## Nebia

**\$399 (about £260)** [nebia.com](http://nebia.com)

➡ **What is it?** A shower's a shower, right? Not so with the Nebia, whose creators say will save you money, help the environment and give you a 'superior experience'. Backed by Apple among others, it's setting out to change the way we bathe.

**When's it due?** Available May 2016.

**Why are we excited?** Nebia claims to use 70% less water than a standard shower. Combine that with the clear demand for it (it raised \$3m on Kickstarter from a target of \$100,000) and there's a real possibility it could significantly reduce water consumption, and thereby help the environment – hurrah!

## Reserve Strap

**\$249.99 (about £160)** [reservestrap.com](http://reservestrap.com)

➡ **What is it?** Forget about waiting until you get home to charge your Apple Watch, the Reserve Strap tops up your wearable on the move. It's the first Watch band with an integrated battery charger, meaning you don't even need to take it off your wrist to keep your wearable juiced up for days.

**When's it due?** Charging up November 2015.

**Why are we excited?** Apple Watch battery life is a sticking point for many potential buyers, so a strap that promises to boost that by 30 hours is bound to turn heads and ease some of those concerns. It looks good too and fits in well with the Watch aesthetic.



# Think different

Decidedly off-the-wall

## Sphero BB-8 droid

**£130** [sphero.com](http://sphero.com)

**What is it?** As soon as it appeared in the *Star Wars: Force Awakens* trailer, the characterful BB-8 rolling droid has become something of an unofficial mascot for the film. And, to the joy of many a Star Wars fan, you can now buy an iOS-controlled replica for yourself.

**When's it due?** Rolling into stores now.

**Why are we excited?** The tennis ball-sized droid has bags of energy and intelligence.

You control it from an iPhone app and can tell it to patrol your home through voice commands – although intruders are more likely to be paralysed by cuteness rather than fear!



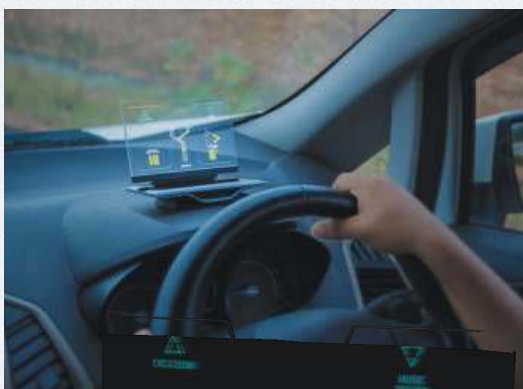
## Exploride

**\$499 (about £325)** [exploride.com](http://exploride.com)

➡ **What is it?** Smart cars are the talk of the tech world amid rumours of Apple's involvement (see MF287). But rather than shell out on an expensive vehicle kitted out with smart features, you could simply buy an Exploride, which promises high tech for a low price.

**When's it due?** Hitting the roads January 2016.

**Why are we excited?** It's a head-up display that lets you have smart features in a not-so-smart car. You can view maps, access music, take iPhone calls and more using gestures or voice commands, making it much safer than blindly fumbling for the car radio dial.





*One more thing...*

# THE MACS OF MOTOR CARS

*If OS X were a car, what kind of car would it be?  
Here's a clue: it probably isn't a Kia*



Steve Jobs could have driven any car in the world, but he chose to drive a Mercedes-Benz. Of course he did.

Mercedes are the Macs of the motoring world, and the silver AMG SL55 Jobs preferred is the Mac Pro of cars: beautifully engineered, ridiculously powerful and incredibly expensive.

Apple and Mercedes have a lot in common. Mercedes has a long history of bringing cutting-edge technology to the masses (the list of things it did first includes the internal combustion engine, all-wheel braking, ABS, airbags and much, much more) in a way that manages to be both aspirational and inclusive. It's the car you dream of when budget or bean counters mandate a Mondeo; the car that transports CEOs and cabbies, pop stars and plutocrats, mourners and models; the car that you might admire for its engineering, lust over for its looks, or buy for both. And because Merces are so well made, they go on forever.

Just like Macs.

I've just put my 2007 MacBook Pro into semi-retirement. It's had one careful owner – me – and three considerably less careful owners – my wife and kids – and it's still going strong after eight years of daily driving, the only bill an unnecessary but effective upgrade from a hard drive to an SSD.

*What I spent on a four-year-old Mac would've bought a new Windows 10 laptop*



The only reason I'm putting it out to pasture as a back-up writing machine is I can't run the latest OS X on it, so I can't enjoy features such as Handoff or some apps I want to run.

Its replacement isn't new, though. It's a 2011 MacBook Air, which I got really cheap on eBay. Bar a couple of little bumps it looks as good as it did when it was first made, and thanks to its lovely former owner sending it in the original packaging I got that new-Mac unboxing joy that's such a part of the Apple experience. Its SSD means it's blindingly fast compared to its predecessor, and unless I'm really unlucky it should have years of productive life ahead of it.

To a non-Mac owner, that probably looks like a daft decision. The same money I spent

on a four-year-old Mac would have bought me a shiny new Windows 10 laptop, maybe even a convertible. And that's true, but that wasn't what I wanted: no matter how well-specced, a Windows PC is a Mondeo to the MacBook's Merc. That's not a slur; Mondeos are really good cars and Windows 10 PCs are often really good computers. But having owned both Mondeos and old Merces (and enjoyed driving both) I know that only one of them makes you smile every time you use it.

Just like a Mac.

**Freelance writer Gary Marshall is saving up for an S-Class. "I've got dreams," he says, "and plans". So far he's saved about 70p.**





# Down to the Metal

**Craig Grannell** investigates what Apple's new graphics API means for Mac apps and games, for consumers and developers alike

**T**ry to imagine riding a bike with square wheels. To move, more effort is required than when using ordinary wheels. This is how Eternal Storms Software founder Matthias Gansrigler ([eternalstorms.at](http://eternalstorms.at)) describes OpenGL on the Mac. Until now, OS X has been lumbered with square wheels – a problem, given that OpenGL is a key system component; as Apple puts it, the API “gives your app access to amazing 3D graphics capabilities”, and it’s especially important in games, creative software, and medical solutions.

OS X’s relatively poor-performing OpenGL implementation has seen the

Mac lag behind Windows in these key areas. Apple’s Metal aims to be the solution, offering improved rendering performance and efficiency. In this feature, developers explain how Metal will impact on the apps and games you love, and what it means for the future of the Mac.

For the uninitiated, software engineer and writer Warren Moore ([metalbyexample.com](http://metalbyexample.com)) explains that Metal is “a graphics application programming interface (API), which means it’s a way for apps to get visual content like text and images on to the screen”. More particularly, it’s a “3D graphics API, useful for 3D elements commonly seen in games, and visual effects – lights, shadows, materials –

that bring such games to life”.

First introduced in iOS 8, Metal is a sort-of successor to the broadly-adopted graphics API OpenGL, which Moore notes was, until recently, the only 3D graphics API supported on the Mac, and “until its latest revisions – not yet available on OS X – had significant systemic inefficiencies”. By contrast, Metal gives developers more direct access to your Mac’s graphics processor unit (GPU), which results in improved performance and efficiency. This, says Moore, means developers can “build faster, more efficient apps using hardware already in the hands of millions of Mac owners”. And since Apple “rebuilt some chief components of OS X on top of Metal, this will bring

## On the box

### Developers speculate on how Metal could affect new Apple TV

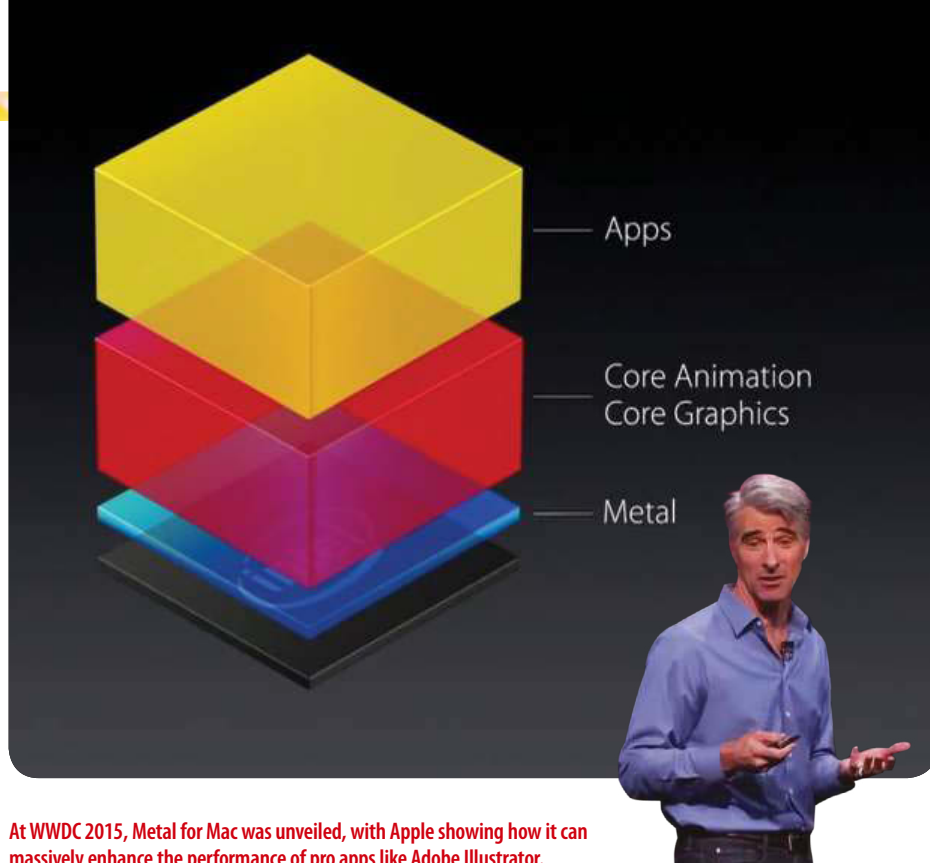
The new Apple TV is A8-powered, the same chip found in the iPhone 6 and 6 Plus. It helps to drive its intelligent search capabilities of the all-new Siri and will change the way we interact with our TV. It is able to run complex games, rather than just a few Apple-approved apps and act as an AirPlay receiver, and it's here that Metal could make a real impact.

"The new Apple TV will, in part, be a games console", explains developer Glyn Williams. "If my guesses about the hardware are right, the resulting machine will in performance terms sit somewhere between the Xbox 360 and the Xbox One. Not the fastest machine, but running Metal, it would be a very credible and inexpensive gaming platform". The iPhone 6 and 6 Plus are some of the best mobile gaming devices around, so it's a safe bet that all will go swimmingly for Apple TV gaming.

Williams reasons Metal is the "key component in making the Apple TV into something quite disruptive", and he's not alone. "With a new Apple TV being based on the A8 processor, there's an opportunity to create games and other applications for it", says developer Simon Gladman. "A common code-base allows developers to write once and deploy across a variety of devices. Because Metal is cross-platform, my own 'engine' can be reused across Macs, iPhones, iPads, and now Apple TV!"

The one concern, suggests Eternal Storms Software founder Matthias Gansrigler, is whether Apple pegs back Metal so it can't fully shine on desktop: "Will Apple focus on feature-parity, making sure that porting between platforms is easier? Desktop GPUs are more powerful than mobile ones, and that could hold the Mac back if Apple decides to keep the available APIs the same."

**Glyn Williams says Metal will make Apple TV into a genuine console to be serious about.**



**At WWDC 2015, Metal for Mac was unveiled, with Apple showing how it can massively enhance the performance of pro apps like Adobe Illustrator.**

much higher performance to every app, regardless of whether its creators directly use the Metal API.

Developer and programmer Simon Gladman ([flexmonkey.blogspot.co.uk](http://flexmonkey.blogspot.co.uk)) adds that there are further advantages to Metal: "It's important because it enables software vendors to create high-performance graphics-based applications, such as games and 3D content-creation software, with a common code-base between desktop and iOS devices. A common code-base means a faster time to market and lower costs associated with software development and maintenance."

#### Playing the game

On hearing 'Metal', Gansrigler isn't alone in first thinking of games, largely because Apple's been pushing the technology in iOS 8. He's hopeful Metal will boost Mac gaming in a similar way to how it improved things on mobile: "For years, Macs have lagged behind Windows PCs with similar specs when it comes to games performance. Even on the same machine, when running a game on OS X and then on Windows using Boot Camp, the difference has often been, to say the least, noticeable."

Giant Spacekat founder Brianna Wu ([giantspacekat.com](http://giantspacekat.com)) provides examples: "Civilization V runs drastically worse on OS X, and Final Fantasy XIV was suspended. The latter uses OpenGL on Windows and Mac, but because the same code was so inefficient on Mac, they had to pull the game from sale." With Metal, she says, Mac games will finally become more

competitive with their Windows counterparts, through developers gaining access to tools for writing the most efficient, high-performance algorithms for your graphics card.

MetalGL's Bill Hollings ([metalgl.com](http://metalgl.com)) says this should "provide additional headroom for those highly-tuned games and apps pushing at the limits", although developers will need plenty of investment and effort to make use of such capabilities. Through reducing CPU usage, Gansrigler posits Metal-based titles could offer improved physics, AI, audio or game logic over OpenGL equivalents. And freelance developer Andreas Monitzer ([monitzer.com](http://monitzer.com)) reckons "professional games

**"A common code-base means a faster time to market and lower costs associated with software development and maintenance"**

will be able to provide the same visual fidelity as on Windows, while reduced battery drain means you'll be able to play for longer."

#### Performance leap

Unsurprisingly, high-profile games studios have already confirmed interest in Metal, seduced by Apple's promises of up to a 50% leap in rendering performance (meaning higher frame-rates) and 40% higher efficiency. But Hollings warns there is a snag: "This is, remember, a technology that does not provide cross-platform support". Professional tools, he says, will generally be able to 'hide' this from the developer, using Metal for Apple devices and other frameworks elsewhere.





Simon Gladman has started developing in Metal for producing real-time video effects using particle systems. Metal provides the processing power to control each of the million particles individually.



Moore adds this will “allow game programmers who use such tools to immediately see the benefits”. But otherwise, Hollings says developers are left to use incompatible technologies, such as OpenGL and DirectX, elsewhere. Naturally, he suggests MetalGL – an implementation of the OpenGL API that runs on the Metal platform – can assist under such circumstances.

Developer Glyn Williams, though, urges a touch of caution when it comes to Metal’s potential for any growth in Mac gaming: “I don’t ever see the Mac becoming a first-class gaming platform. The economics of the industry do not favour a smaller platform where most users have mobile GPUs.” In other words, the inherent nature of the hardware may still count against the Mac, although it’s arguable Windows isn’t immune to such issues, with the majority of sales being notebooks rather than desktops, let alone powerful gaming rigs.

## Apptastic

Gladman is keen to note Metal isn’t just for games: “As well as ‘vertex’ and ‘fragment’ shaders which are used for 3D, Metal includes ‘compute’ shaders. These allow parallel data computation for tasks such as data visualisation, image processing and physics simulations.



## Interview

### Brianna Wu

Founder, Giant Spacekat  
([giantspacekat.com](http://giantspacekat.com))

*Brianna explains why Metal is a boon for creatives and consumers everywhere*

**MacFormat:** What do you see as the key benefits of Metal?

**Wu:** It’s easy to talk about Metal in terms of how it’ll affect people who consume games, but the Mac’s always been the premiere operating system for creation. The most exciting thing about Metal for me is how it will solidify Apple’s position as the best platform for developing creative content.

**MF:** In what specific ways will Metal help developers?

**Wu:** You’ll see better performance for creative apps like After Effects and Illustrator. I use Unreal Editor 4, and for years have had to use it in Windows via

Boot Camp. But now it’s out for Mac, and if Metal realises its potential, my next Mac could be a maxed-out MacBook Pro rather than a Mac Pro. MacFormat readers will find similar advantages. If you play games, you might think the new MacBook is sexy as hell but wonder if it’ll be enough. Metal will let any Mac be enough for a lot more people — you’ll get more bang for your buck!

**MF:** Some devs claim Metal is a blow to the indies, what’s your take on it?

**Wu:** When we made Revolution 60, Unreal Engine 3 didn’t support Metal. We had to downgrade the graphics in several areas, because they’d have hurt the overall performance of the game. Metal would have helped. Our next project’s a lot bigger than a smartphone game, and Metal will similarly drastically influence how it will look when you play on your Mac. Honestly, when we as a company asked ourselves if we were going to support the Mac in the future, Metal was one of the main reasons we decided to. It makes OS X a viable platform in a way it wasn’t before.

Image © Shannon Grant Photography

Giant Spacekat’s ambitious Revolution 60 had to be simplified visually to achieve better performance. Apple’s Metal will ease such limitations.







## Interview

### Jack Greasley

Head of technology, The Foundry ([thefoundry.co.uk](http://thefoundry.co.uk))

*Jack worked closely with the Metal Group. Here's why he's excited about Apple's plans*

#### **MacFormat:** Why is Metal for the Mac such a big deal for developers and Mac users alike?

**Greasley:** Graphics APIs, across all platforms, have become pretty bloated and complex over the years. The enormous complexity of writing modern GPU drivers causes problems with stability and performance. By stripping things back down to basics, Metal removes years of accumulated cruft, making it much easier to write fast, stable, performant code. Multi-threaded programs are finally able to make efficient use of the GPU, leading to higher frame-rates and more CPU time

for tasks such as audio and artificial intelligence. Having a simple, easy-to-use API for GPU processing, Metal future-proofs the Mac platform and ensures Mac applications are as fast as they can be.

#### **MF:** How do you see Metal actually improving Mac apps?

**Greasley:** At The Foundry, we write digital content creation (DCC) tools. Our software – like Modo, Nuke and Mari – is used by designers, artists and movie-makers to create stunning images. We've been big Mac fans for years and most of our software runs on OS X. Our applications make heavy use of the GPU, performing lots of heavy image processing and making use of high resolutions and complex pixel formats.

Writing software with the highest possible GPU performance can be a black art as there are multiple layers of drivers and OS between you and the hardware. Metal simplifies this task for us. Given greater control and visibility about what is going on

with the GPU, we can give users better performance and stability. They're getting more for the money they spend on the hardware and that's a good thing.

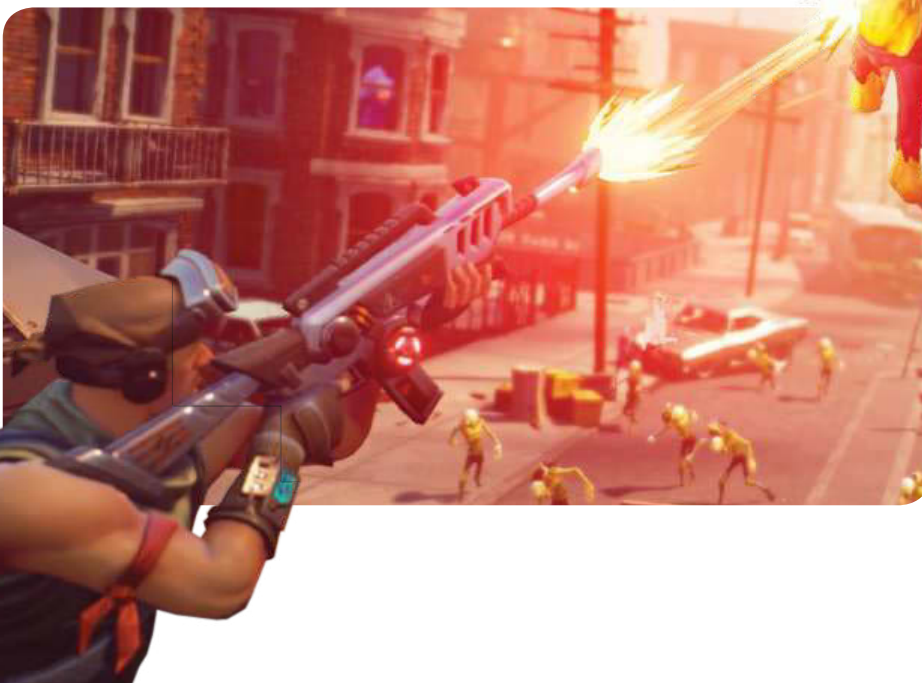
#### **MF:** How does Metal compare to equivalent technology elsewhere, and what's it really like to use?

**Greasley:** We've done early development work with Metal and found it a joy to work with. The API is nice and clean, the tools are well written and well integrated. Other solutions exist on other platforms, but none have the deep integration with both the OS and also development tools that Metal has.

As the API is much 'thinner' than existing solutions, cross-platform development isn't as complex as you might think it is. As long as your GPU-specific code is well-structured, Metal provides a good model for how high-performance code should be written on any platform. By following and implementing this model on other platforms, you will get good results.



**Epic showed off Fortnite at WWDC 2015. Metal improves things from a development standpoint, for the many layers of rendering, and when playing the game itself.**



Already companies such as The Foundry and Adobe are using Metal to speed up their content-creation software."

In fact, Moore explains Metal potentially benefits every app on your Mac: "Apple has re-architected key display technologies like Core Graphics and Core Animation to reduce CPU usage, reduce energy use, and increase graphics performance. This means actions like moving windows and transitioning between windowed and full-screen modes are snappier on OS X El Capitan than Yosemite on comparable hardware. In this sense, users will feel the difference without any action on the part of application developers."

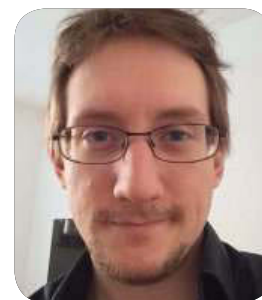
Naturally, creative apps have the most to gain from Metal, though (rather than the relatively tiny gains the likes of Finder will see), and Gansrigler's excited about the possibilities. He reckons pro apps that could particularly benefit include Final Cut Pro X and Adobe's After Effects, through "being able to live-preview more effects at the same time and render the resulting video more quickly". (Indeed, at WWDC 2015, Apple Senior Vice President Craig Federighi said Metal helped Adobe improve the effects rendering engine within After Effects up to 8x.)

Such performance boosts could, according to Gansrigler, turn content creation on its head. "For example, in 3D model creation, it isn't uncommon to deactivate complex shaders when working on a model, because turning it around becomes sluggish and





Games like Asphalt 8 take advantage of Metal on iOS, enabling complex effects and more on-screen items. Similar benefits will soon come to the Mac.



**Matthias Gansrigler believes Metal could inspire developers to take Mac games more seriously.**

**Civilization V on the Mac is far less performant than on Windows. Metal will change this though.**



unbearable", he explains. "Metal might make it possible to leave those shaders active", thereby giving the designer "a much better look at what they're working on at all times", and resulting in a superior end product through quicker iteration. And regardless of your chosen field, desktop displays are now following mobile in ramping up to high-resolution, which makes graphics performance increasingly important.

## Resources required

Despite the potential afforded by Metal, developers are cautious about singing its praises too much. Indie Mac/Linux porter Ethan Lee ([flibitijibibo.com](http://flibitijibibo.com)) complains it's restricted to "those with resources to dedicate towards Apple-specific products", claiming that "the rest of us are basically going to get nothing out of this". Monitzer counters that some gaming indies will at least be covered through "Metal being adapted by large game engines, meaning anything developed with them will use it automatically".

Gladman echoes Lee's concerns about Metal, saying it "requires a fair amount of effort to really get up and running", and wonders whether Apple should deliver a high-level framework to exploit its power: "This could mean extending SceneKit, for example, with a suite of new features, such as photorealistic renderers and GPU-based solvers for cloth, hair, smoke and liquid simulations". Alternatively, he

mullets the emerging open-source community around Metal could fulfil that role.

More positively, Moore says we've already seen Metal "bring new gaming experiences to iOS by enabling more immersive effects and a greater amount of content on the screen at once", and the Mac could enjoy improved games and OS snappiness. And Gansrigler wonders whether Metal could usher in more Mac ports, due to a combination of the platform's increasing sales and developers being enticed by the new and impressive API.

## Moving windows and transitioning between windowed and full-screen modes are snappier on OS X El Capitan than Yosemite on comparable hardware

### The competition

Still, it's worth remembering Apple is not alone in this space. Microsoft is working on a Metal-like version of its own DirectX, and The Khronos Group recently announced Vulkan, a cross-platform spiritual successor to OpenGL. Moore believes if you saw an architectural diagram of the three APIs, "the similarities would be striking, because the idea of reducing CPU overhead is part of a sea change that's been underway for years"; Lee, though, is irked Apple has taken a proprietary route: "Metal is downright irritating for anyone who ships for more than one platform. OpenGL meant I could ship basically wherever I wanted. With

Vulkan happening at literally the exact same time, I can't help but be incredibly annoyed we're now looking at another proprietary API."

We've heard similar complaints elsewhere, and therefore wonder whether rather than seeing more Mac software, as Gansrigler hopes, Metal's proprietary nature might result in the platform getting less. Wu doesn't think so. She's not only excited about the prospect of a well-implemented Metal giving OS X parity with Windows, but also the advantages Apple enjoys: "With Windows machines, there

are so many graphics cards, it's impossible to address them all. With OS X, Apple's only working with so many, and so can write specific shortcuts and tricks for your graphics card, in ones and zeroes. This is something only Apple can do."

She continues by arguing developing for Apple users always requires a trade-off: "Cross-platform technology might be easier for you as a developer, but gives a worse experience for the consumer, and that's not an experience Apple customers are comfortable with. If that's your attitude, perhaps OS X isn't the best fit for you." Gansrigler concurs, and adds Apple's advantage in everything coming from one place could eventually push Metal ahead of its rivals: "Apple has stated the shaders they provide have been fine-tuned for every single graphics chip supported by Metal. I don't think Microsoft nor The Khronos Group will be able to say the same!"



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Amazing  
things to  
do in

# iOS 9

Words: Matt Bolton, Christian Hall, Alan Stonebridge Images: Apple

iOS 9 is finally here, and it's bursting with dozens of enhancements for your iPhone and iPad

When a new iPhone is on the horizon it's accompanied by a brand new OS to run on it. But, thanks to Apple's Beta Software Program, we've been able to road test iOS 9 for months. It's been through a few iterations, with minor changes, but we've finally been able to explore the finished version and share with you our favourite new ways of getting more from your iPhone and iPad.

iOS 9 has some significant changes to the way you use an iOS device – it runs on all the same devices as iOS 8 – and it's not just cosmetic either. Entirely new apps like Wallet and News replace

Passbook and Newsstand, while iCloud Drive finally gets its own app to make it easier to get to your cloud-saved content.

Then there's everyone's favourite voice assistant, Siri, which has been bolstered in iOS 9 with new voice training abilities. Find Siri in Settings and turn on "Hey Siri"; you'll be asked to speak a few things so it gets to know your voice better in five quick and easy steps.

Talking of battery power, iOS 9 makes some major changes to help you get even more hours out of your iPhone. The all-new Low Power Mode turns off parts of the system that aren't absolutely essential, meaning valuable power can be saved to get you through the day.

Over on the iPad some of the biggest changes are focussed on its interface. The fantastic Split View for iPad Air 2 and the recently unveiled iPad mini 4 gives you a side-by-side way to access two apps at once. It's a feature that Windows users will know all about and it's available in OS X El Capitan on the Mac too.

Then there's Slide Over, a great new way to pull in another app for quick access, such as Mail when you're watching a film, or Calendar while browsing Safari, for example.

Beyond these great headline features, we've discovered dozens of other useful improvements which we're sharing with you now. Enjoy!





Aside from a new system font, iOS 9 looks like its predecessor. However, dig a little deeper and you'll find a plethora of changes that make it much better to use.

# Smarter and faster

Check out these brilliant new features and improvements that make your iOS device even more pleasurable to use

## Search in Settings

**1** At the top level of Settings is a search bar. Type something into it to get a list of matching settings, including the path to reach them, although you can just tap an item to jump straight to it.

## Deal with bad Wi-Fi

**2** If Wi-Fi Assist is switched on at the bottom of Settings > Mobile Data, iOS will fall back on your mobile network when it recognises that the Wi-Fi network you're using is doing a poor job of getting you online.

## On-screen keyboard

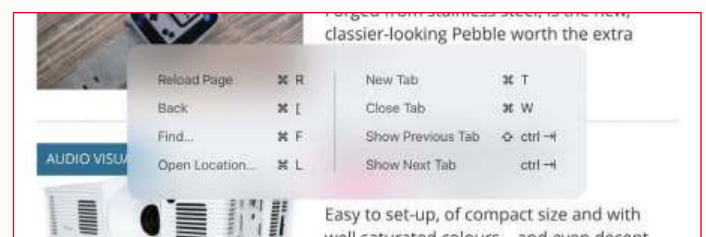
**3** Okay, breathe a sigh of relief: letters on iOS 9's on-screen keyboard reflect the case in which you're typing. The top row of the iPad's keyboard contains shortcuts to features such as copy and paste, undo/redo, formatting controls and buttons to attach photos and items in iCloud Drive in apps such as Mail.

If you type quickly and with high accuracy, the character previews that appear above your finger each time you tap a key can be a distraction. They can be turned off in Settings > General > Keyboard.

## Bluetooth keyboards

**4** When using a Bluetooth keyboard, the shortcuts bar still appears at the bottom of the iPad's screen, along with an option to hide it. When you

press  $\text{⌘} + \text{⏏}$  on a hardware keyboard, iOS 9 presents an OS X-inspired app switcher that's faster than the one controlled by touch. It enables you to reach any of the last eight apps you've used.



If you prefer to use a Bluetooth keyboard for writing, the experience is much improved now that you can look up common shortcuts. There's an OS X-inspired method for switching apps, too.





## Broadly useful new accessibility settings

**5** Accessibility features (in Settings > General) have been expanded with useful switches that disable features that might get in your way. You can turn off the Shake to Undo gesture, which you might find is too easily triggered. Vibrations from your iPhone can be suppressed, too. Touch Accommodations are intended to assist people with motor difficulties, but you might find them useful for very young children. You can adjust how long the screen must be touched before an action is triggered, treat multiple touches within a duration as one, and set whether a finger's location when it touches or leaves the screen determines your intention.

## Text insertion

**6** Positioning the insertion point just got easier on the iPad. Hold two fingers on the on-screen keyboard and the keys become greyed out. A blue vertical bar appears at the insertion point's current location, and you can move it like you would with a mouse or trackpad on a computer by sliding both fingers around the screen; the insertion point will follow. Lift your fingers to finish.

## Choose Siri's accent

**7** Until now, the language you selected for Siri would determine its accent in addition to guiding its expectation of how you say words – but not

anymore! If you prefer to have it speak to you in a North American or Australian accent, you can choose that in Settings > General > Siri > Siri Voice, which replaces the simpler Gender setting from iOS 8.

## Text to speech

**8** If you use iOS's ability to read out text that's selected, new voices can be found in Settings > General > Accessibility > Speech > Voices.

## New actions

**9** New actions for dealing with email attachments enable you to save things to iCloud Drive, or to use Markup to annotate PDFs and images and return that in your reply.

## Device and data security

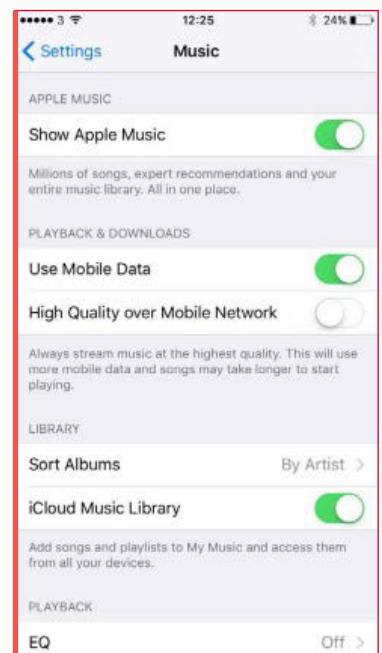
**10** The next time you set a passcode that unlocks your device, you'll find that iOS 9 wants it to contain six digits – but tap Passcode Options if you still want to use four digits, or to pick Custom Numeric Code. This new option enables passcodes as worryingly short as one character, or much longer than six. As an added level of security, this option stops the Lock screen giving away the length of your passcode, making it harder for people to guess as what is entered is submitted only when OK is tapped.

In Settings > General > Auto-Lock is a new option that locks your device after just 30 seconds.

Your website accounts and saved bank cards (in Settings > Safari) are now protected by Touch ID rather than your passcode, provided you have set up Touch ID.



When setting a passcode, six digits is now the default length. However, additional options enable codes of arbitrary length. One option makes it even harder for someone to guess your code.



## Music

**11** In Settings > Music you can choose to have music streamed from iCloud and Apple Music in high quality. You might disable this if you're on a limited mobile data plan.



## Camera

**12** In Settings > Photos & Camera, you can lock in settings for the resolutions and frame rates used to record regular or slo-mo video. Tap Record Video or Record Slo-mo to choose from the available qualities, which vary between generations of iPhone. There's also some on-screen guidance about how much space a minute of footage at each quality will take up. (Remember, the amount available is shown in Settings > General > About.)





## Introducing Blackmagic URSA Mini, the lightweight Super 35 4.6K digital film camera with 15 stops of dynamic range!

Introducing URSA Mini, a handheld Super 35 digital film camera with an incredible 4.6K image sensor, global shutter and a massive 15 stops of dynamic range! The super compact and lightweight design is perfectly balanced, making it comfortable enough for all day shooting. URSA Mini lets you shoot at up to 60fps, features a 5" foldout viewfinder, dual RAW and ProRes recorders, and more!

### Incredible 4.6K Sensor

URSA Mini can capture images at a resolution and dynamic range that goes well beyond that of traditional motion picture film so you can shoot your own epic, cinematic masterpiece! You can capture images up to 4608 x 2592, which is larger than 4K DCI, with 15 stops of dynamic range so you get incredibly clean pictures with amazing detail in everything from the darkest shadows to the brightest highlights! URSA Mini can record 4.6K at up to 60fps, or 1080 HD at up to 120fps.

### Lightweight and Portable

URSA Mini's perfectly balanced body is made out of space aged magnesium alloys so it's rugged, yet lightweight and comfortable enough to be used all day. You get a super bright 5" fold out touch screen for on-set monitoring, that can also display overlays for timecode, histograms, audio meters, focus peaking and more! URSA Mini features full size, professional connectors, even 12G-SDI, so you don't need custom cables, plus high quality stereo microphones and a side grip mounted on a standard rosette.

### Completely Customizable

Blackmagic URSA Mini is completely customizable so you can create a rig that's built specifically for your production! Add accessories like the Blackmagic URSA Viewfinder and Blackmagic URSA Mini Shoulder Kit, or choose from hundreds of third party accessories. URSA Mini has 9 standard 1/4" threaded mounting points on the top and bottom of the camera so you can mount it directly to a tripod as well as add accessories such as rails, matte boxes and more.

### Non-Stop Recording

You never have to stop recording because URSA Mini features two CFast 2.0 recorders! When one card is full, recording automatically continues onto the next. URSA Mini uses the latest, incredibly fast CFast 2.0 technology for recording speeds up to 350 MB/s. Wide dynamic range images are saved as 12-bit RAW files, which are perfect for high end grading and effects work, or as broadcast quality ProRes, for easy post production workflows with minimum storage requirements!



### Blackmagic URSA Mini Models

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Blackmagic URSA Mini 4K PL	£2,359*
Blackmagic URSA Mini 4.6K EF	£3,355*
Blackmagic URSA Mini 4.6K PL	£3,699*
All models include DaVinci Resolve 12 Studio	

[www.blackmagicdesign.com/uk](http://www.blackmagicdesign.com/uk)

Electronic Viewfinder, lens and accessories sold separately.

\*SRP is Exclusive of VAT.



# Search and Safari

Two important features are now more powerful than ever before

## Proactive suggestions

**13** Where you previously had to type before Spotlight Search showed anything, iOS 9 proactively assesses what you do and when, and uses that to display things you might need right now. The search page also displays online news for your location.

## Newly searchable

**14** Many more kinds of item show up in iOS 9's search results. Go to Settings > General > Spotlight Search and you'll see many more built-in apps are listed, including iBooks, Health and Wallet. Third-party apps from the App Store are listed, too. In fact, the rather longer list is indicative of a new capability Apple has placed in the hands of developers, who

can make their apps' contents searchable in Spotlight. If you see unwanted kinds in search results, you can hide them here. However, you can no longer rearrange the list to prioritise things. categories.

## Disable proactivity

**15** If you prefer not to see Spotlight's proactive suggestions, they can be disabled in Settings > General > Spotlight Search. Switch off Siri Suggestions at the top of that page.

## Dictate your terms

**16** There's now a microphone icon at the right of the search bar, which enables you to say what it is you're looking for. This is available even if you've turned off iOS's Dictation feature

(which is triggered from the keyboard wherever you can type).

## Perform calculations

**17** You needn't dig around for the iPhone's Calculator app to perform basic arithmetic because you can run numbers in Spotlight Search, just like in OS X. An added bonus is that it works on iPad too, even though that device lacks the Calculator app. Type a calculation into the search bar, using \* for multiply and / for divide. Try using common functions too – for example, sqrt(144).

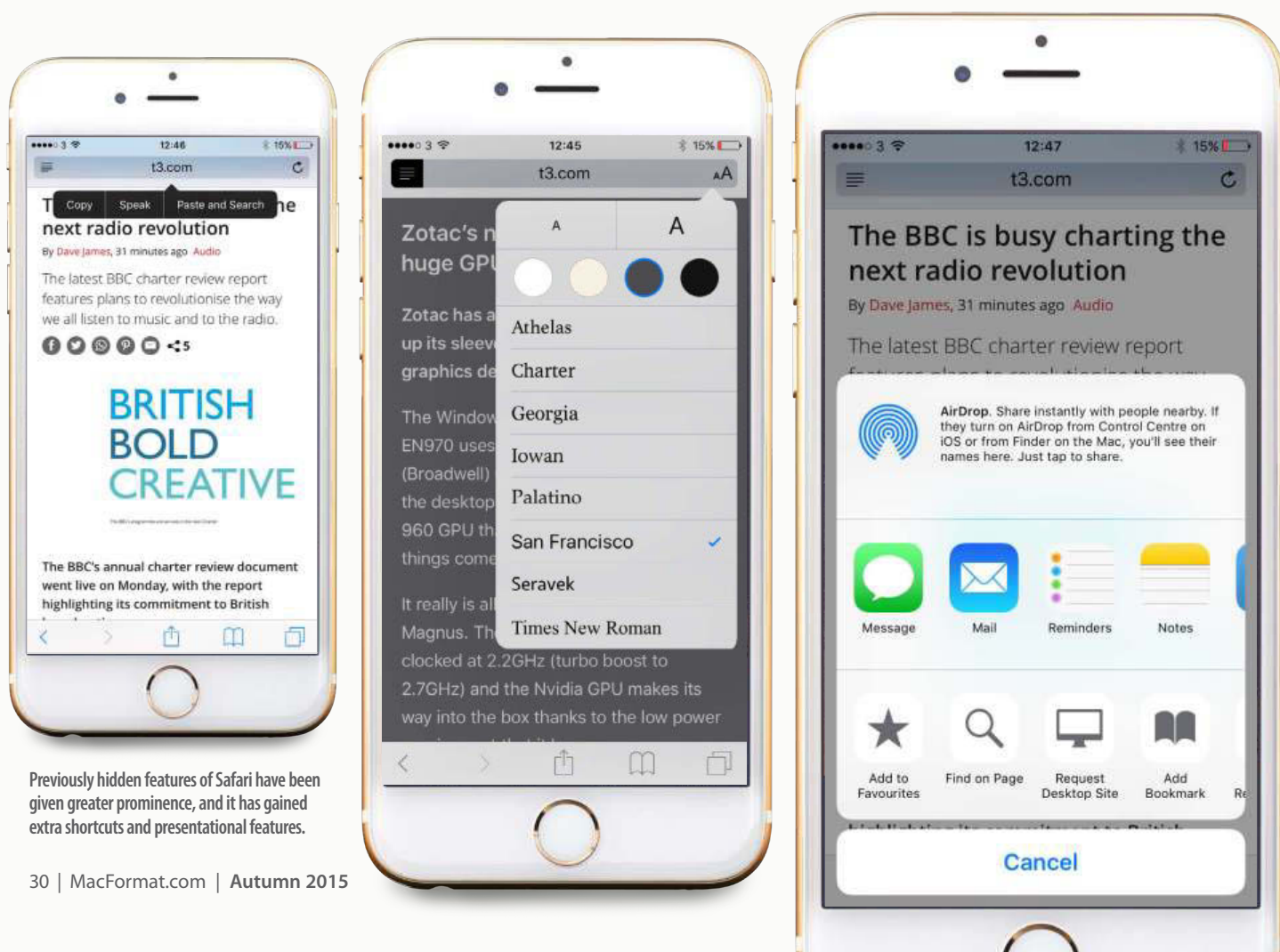
## Accessing Search

**18** Prior to iOS 7, the system-wide search feature was accessed by swiping to the left of the first Home screen.

Later, Search appeared when you swiped downwards on any Home screen. In iOS 9, both methods work, but there's a subtle difference to note. The latter method opens the search page with the input focus already in the bar and the keyboard visible, and a list of suggested apps even before you type – but nothing more until you do. Use the former route if you want to see iOS's proactive suggestions.

## Content blockers

**19** These days, the size of many web pages has become bloated, and often you'll find them slow to load on your iOS device – even over a good Wi-Fi connection. Partly this is due to complex scripts often used by online advertising, which take



Previously hidden features of Safari have been given greater prominence, and it has gained extra shortcuts and presentational features.



time to run. In iOS 9, Safari includes support for content blockers that can be configured to stop content from certain web domains from loading. You can manage content blockers in Settings > Safari. You'll only see a Content Blockers item listed under the General heading if you've installed an app that adds one (even though the item shows up when you search for it at the top of Settings).

### Easier on the eyes

**20** Safari's Reader feature, which strips away superfluous content on long pages to give you a cleaner, reformatted view of only the actual content, has a bunch of new visual options. It presents text in the San Francisco font by default,

which is the system font on all three of Apple's latest operating systems. The same seven fonts available in iBooks are also available here, along with a choice of page background colours (white, cream, dark grey and black – the third of those is also now available in iBooks). Naturally, the text size remains adjustable.

### Do things with a page

**21** The bottom row of the share sheet contains a couple of new things besides Safari's Request Desktop Site. Add to Favourites, which was previously tucked away with Request Desktop Site, is found here, along with a more explicit Find on Page action as a convenience for anyone who is unaware of the existing, more hidden route of

## Request Desktop Site

**22** In iOS 8, the option to load the desktop version of a website

was tucked away where it was easy to miss. There are now two ways to reach it. The long-winded way is to tap the Share button and then Request Desktop Site in the bottom row of actions. However, it's quicker to hold a finger on the reload arrow in the address bar for a moment, then tap Request Desktop Site when it appears.



tapping the search field and then the last item in its suggestions.

### Paste and Go

**23** It takes fewer steps to paste and go to a web address that you've copied to the Clipboard. Hold a finger on the field and tap 'Paste and Go' in the options bar when it appears. With something else on the Clipboard, you'll get a Paste and Search option instead.

### Upload files

**24** Got a CV to upload as part of a job application? Wherever you see an option to upload a file to a site, you'll find iCloud Drive among the sources from which you can attach and submit a file to an online form.



Spotlight Search is a lot smarter in iOS 9, and it even saves you having to search for the Calculator app because you can give it arithmetic expressions.



# Notes and Reminders

Important little details that you jot down are much smarter and richer

## Persistent reminders

**25** Due reminders on the Lock screen remain there unless you actively action them – if you unlock and then lock your phone, your reminders will still be listed on the Lock screen.

## More responses

**26** When you do action a notification, you have more options than before: you can mark something as completed, or you can choose the Later option, which gives you the choice of ‘snoozing’ the reminder.

## Create reminders

**27** While in an app, you can tell Siri to “Remind me about this” and it will create a reminder named after

whatever you’re currently looking at in the app. You can also send things to Reminders from apps such as Safari by tapping the Share button, then Reminders. Here, you can add text and, by tapping the Options button, set a time or location to be reminded. In Safari’s case, when you access that reminder, it will take you straight to the linked web page.

## Enhanced notes

**28** In the new, richer Notes app, you can embed pictures or web links into your notes. The easiest way to do this is often from Safari or the Photos app – tap the Share button, then choose Notes. You’ll have the option of adding text to go with your link or photo, and choosing whether to create a new note or

add to an existing one. Pictures can also be added using the camera icon above the keyboard inside the Notes app (if this isn’t visible, tap the + on the right to reveal it).

## Make checklists

**29** You can add checklists to notes, too – tap the icon of a circle with a tick inside, just above the keyboard. Type your first to-do, then press return to start a new one. Press the icon again to stop. To mark an item in the list as done, tap its circle.

## Sketch out ideas

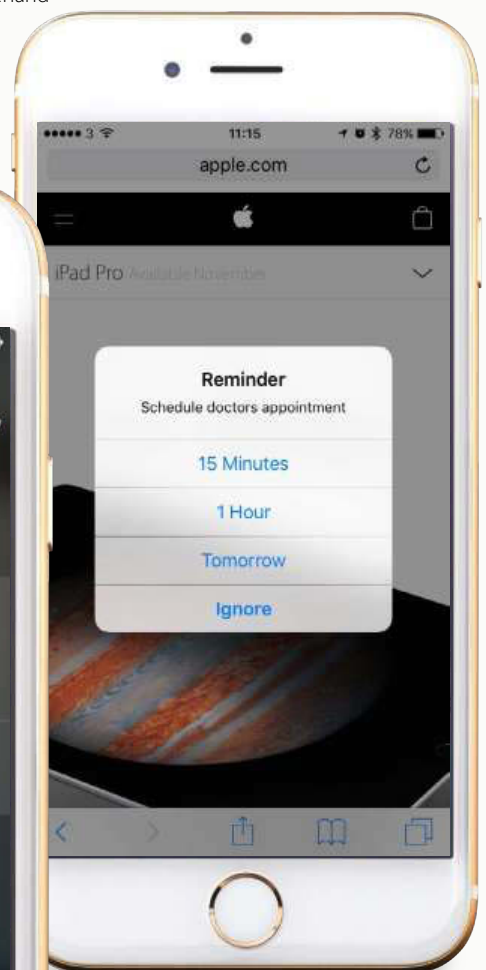
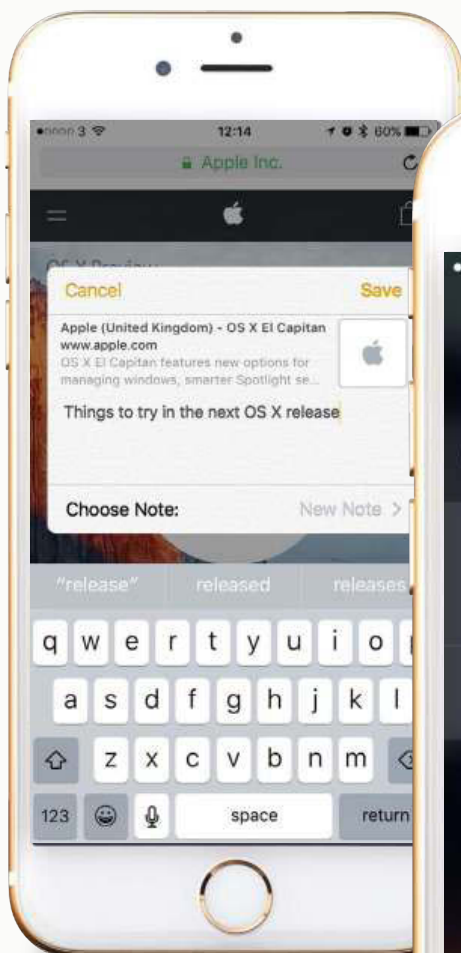
**30** Tap the squiggly line icon above the keyboard in Notes to add freehand drawings and use a ruler tool to draw straight lines.

You can choose different drawing implements and line colours. There are undo and redo options, and you can rotate the whole drawing for easier working. Tap Done to insert it.

## Text styling

**31** The Aa icon above the keyboard in the Notes app lets you style up text in notes as headings, subheadings and lists. Highlight text and choose a new style for it, or start a new line and choose a style before writing. Highlight text and then tap BIU in the pop-up options bar to change its weight and decoration. You can indent the current line or selection from the same pop-up.

(Left) Notes can contain much more than text; you can attach links to web pages, add checklists and draw sketches on the touchscreen.



(Left) You can ask Siri to remind you later about whatever you’re looking at in Safari. (Above) Reminders have more ‘snooze’ options.



# Multitasking

Working with multiple apps just got a whole lot easier

## New App Switcher

**32** The App Switcher has a new look. Recent contacts are gone, but Handoff is more prominent in a bar at the bottom – tap it to receive a task.

## Return to an app

**33** When you switch apps through an action such as tapping a notification, you'll see a 'Back to...' button at the top-left corner of the screen.

## Dip into apps

**34** Slide Over enables you to bring up a thin view of another app (which must support it) by sliding a finger

inwards from the right edge of an iPad's screen, so you can attend to things without stopping what you're doing. To switch apps, swipe down from the line at the top of the right pane.

## Work in two apps at once

**35** Split View lets you run two apps side by side – but only on an iPad Air 2 and iPad mini 4. To use it, start with the same gesture as Slide Over, let go, then drag the vertical line on the divider to the middle of the screen.



At last, you can work in two apps side by side, which is great for researching in Safari and taking notes alongside. However, this feature is only available on the iPad Air 2 and iPad mini 4.

## Picture in Picture

**36** On any video that uses Apple's default video player, tap the button that shows two rectangles and an arrow. This turns the video into a small

floating box, which can be moved to any corner, resized using two fingers, and stays open even if you change apps. Flick it off the left or right of the screen to temporarily hide it (it will keep playing).

# Battery & storage

iOS 9 has great new ways to manage your device's storage and battery

## Conserve power

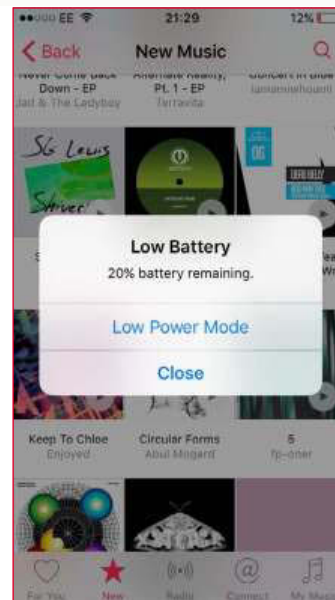
**37** Smartphones are power hungry, there's no way around that with bright touchscreens and plenty of apps running. But it's good to see Apple turning its attention to battery management proper. Low Power Mode disables certain aspects of your iPhone, including background app refresh, so you don't have to go around turning off features any more. It can extend usage by a few hours, and kicks in (as an option offered in an alert) when your iPhone reaches 20% of its battery capacity. The battery meter at the top-right of the screen turns yellow to indicate Low Power Mode is enabled. The feature can be turned on manually at any time in Settings > Battery.

## Manage your usage

**38** In Settings > Battery, you can view what hogs the battery. There are two options, Last 24 Hours or Last 7 Days. They display the proportion of battery life used by each app in that time. Tap the clock icon on the right to see the duration that apps were using battery, both while on-screen and in the background.

## Exiting Low Power Mode

**39** You can turn off Low Power Mode manually, of course, in Settings. However, when battery power reaches 80% on charging your device, Low Power Mode will be turned off automatically, returning your iPhone to full throttle.



Apple claims Low Power Mode can keep your iPhone running an hour longer before it needs recharging. Turning it on is optional.

## Monitor batteries

**40** Among a slew of subtle changes to Notification Center, on an iPhone only you can check battery statuses in the Today view. The Batteries widget shows power levels of your phone



Low Power Mode turns itself off when your iPhone reaches 80% of battery capacity, or you can disable it sooner in Settings > Battery.

and Bluetooth accessories, such as headphones or an Apple Watch. To enable it, scroll to the bottom of the Today view, tap Edit, then tap the + next to the widget's name. The Batteries widget is not available if a Bluetooth accessory is not paired with the iPhone.





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# Other apps

Beyond the big changes, there are plenty of subtle ones to discover

## News and Newsstand

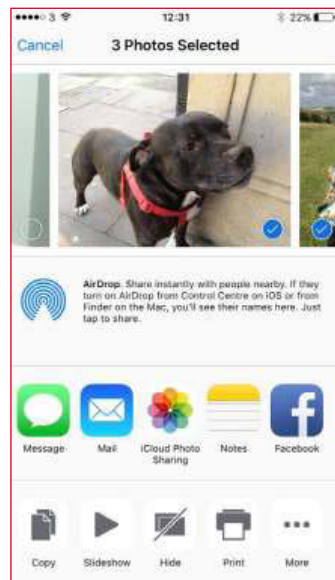
**41** News is a brand-new app that provides timely information in a single place, much like you might once have caught up with website updates in an RSS reader. However, it comes with its own publishing format that enables the use of animation and other engaging interactions. At launch, it's geared towards the US, but it's expected to launch in the UK soon after.

If you read digital editions of MacFormat or other magazines, you might wonder what News means for them. Newsstand is gone in iOS 9 – sort of. If you already had magazine apps, Newsstand will have been converted to a regular folder, and apps can be moved out of it. Future magazine downloads go straight to the Home screen.

## Wallet

**42** Wallet is the new name for Passbook. It still contains your passes for airlines, hotels and other services, and bank cards registered to use with Apple Pay. To make accessing these things more convenient, go to Settings > Wallet & Apple Pay and ensure the Home button shortcut is switched on so you can double-click the button to open Wallet while your iPhone is locked.

Rather than tapping each photo you want to select, iOS 9 enables you to do it with one tap followed by a swipe across them.



To hide multiple photos, select one, call up the share sheet, select more photos in the strip across the top, and then tap Hide.

## Photos

**43** When viewing a photo full-screen, a strip across the bottom of the screen shows other images in the same album, collection or moment. Swipe across it to quickly browse through them.

In the Photos tab, tap Select then drag your finger from one photo to another to select them and those in between, rather than having to tap each one you want in the selection.

Rather than reaching for the back arrow at the top-left of a full-screen photo to return to its album, swipe downwards to dismiss the picture.

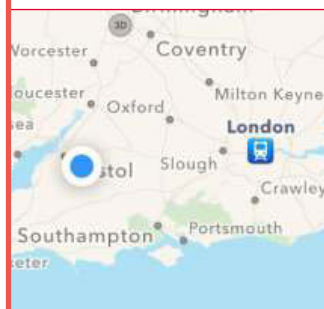
This is particularly handy on larger iPhones.

If you put screenshots on social media, as some of our friends do, you'll be ecstatic that iOS at last adds them to a Screenshots album, making them much easier to clear out of your library later on. There's a Selfies album

## Maps

**44** The latest step in Apple's attempts to bring Maps up to scratch is the inclusion of public transport data to help you get from A to B, rather than just driving and walking directions. Previously, Apple made it so third-party transit app developers could plug into Maps, but now it's starting to add its own data to the app by default, including details of problems on your route, like it does for driving directions. However, transport data is available for a limited number of cities at present, which is pretty normal as localised services of this sort start to grow.

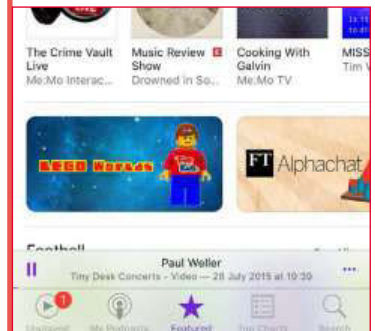
Tap the Transport tab while plotting directions and the app will try to use Apple's own data before suggesting you look at transport apps in the App Store. Tap the 'i' at the bottom-right and switch to the Transport view. In all three views, a '3D' badge next to a city indicates you can take a Flyover tour of it. Zoom out in the Transport view and other badges will indicate where public transport data is available.



As you zoom out in maps, look for blue icons next to cities, which indicate public transport directions are available there.

too, but it isn't powered by intelligent face detection; any photo taken with the front-facing camera appears in this album.

Rather than tapping and holding on a photo for an option to hide it, you must now tap Select, tap a photo, then the Share icon and find the Hide action in the bottom row of the share sheet. That takes a little longer for a single photo, but the advantage is that you can select additional photos in the share sheet and then hide them all at once.



## Podcasts

**45** Podcasts has been given a makeover to be more consistent with the Music app added in iOS 8.4. Music's MiniPlayer – a bar above the tabs at the bottom when something is playing – is replicated, as is the use of an ellipsis (...) to indicate more options for an adjacent item.

The My Podcasts and My Stations tabs have been consolidated under the former, and the new Unplayed tab is more immediate in showing what you need to catch up on.

More detail is shown in the Top Charts tab (star ratings and the date of each podcast's most recent episode) but some control has been sacrificed; categories in Featured and Top Charts no longer have subcategories.





# The iCloud Drive app

The Document Picker is now found in a dedicated app, enabling access to your files on all your devices

## Find the app

**46** iCloud Drive is Apple's storage solution for managing file syncing between your Mac and iOS devices, but until now it has been very much 'in the air' because there's been no easily visible hub for it on the iPad and iPhone. But for iOS 9 Apple built an iCloud Drive app, holding all your iCloud Drive files in one easy to access area. However, the app doesn't automatically appear when you upgrade your device to iOS 9. It has to be enabled in Settings > iCloud > iCloud Drive > Show on Home Screen).

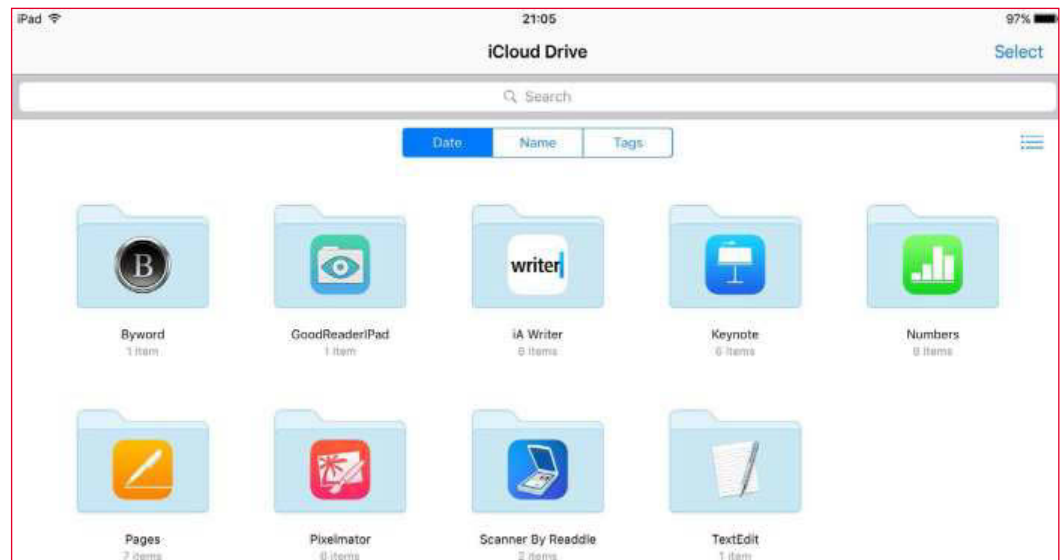
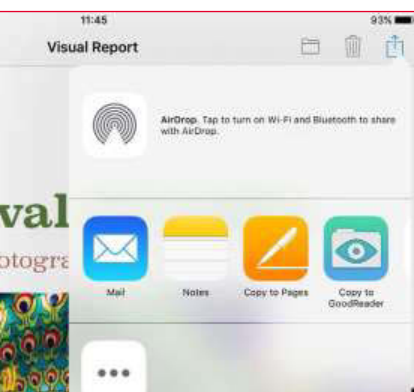
## View your Drive

**47** When you tap the iCloud Drive app's icon, you'll see the Document Picker (a grid of the folders and files within your cloud storage). Previously, this only appeared in compatible apps, rather than its own app. At the bottom of the screen, you can see how many items are in the current folder, and how much space you have available in your iCloud Drive.

## Dealing with files

**48** iCloud Drive in iOS 9 tries to mimic the folder and file experience you get on your Mac. Tap on any file to view it. You can also create new folders and move files to different locations, as you would expect. The iCloud Drive app has brains too; if you select a series of files in a folder that doesn't have any subfolders and then tap

Options to send the selected file to an app appear in the middle row of the share sheet.



The iCloud Drive app enables you to preview files, send them to people, export them to other apps, and delete old files to free up storage space.

Move, the app will automatically determine whether you need to create a new folder and prompt you to enter a name for it. If you already have one or more subfolders, the app shows you a list of them to choose from.

## Edit a document

**49** In order to make changes you have to export the file to a different app. Tap the Share button (top-right) and then select the app you'd like to export the file to. You'll be redirected to that app, where you can edit it fully. Depending on the file type, some of your formatting preferences, like fonts, might be different. Every change you make will sync back to iCloud. Rename a file by holding a finger on it and choosing Rename. This works for nested folders, too.

## Preview a file

**50** The app also allows you to preview files within your iCloud Drive. It only knows how to display a handful of file types, but it can display text documents. You can also access the



You can preview files that iOS can read without leaving the app, but not all files copied to Drive from your Mac will open.

Sharing sheet to send the file to other people in an iMessage, email, or as an attachment in other messaging apps.

## Change view

**51** You don't have to stick with the large folder view shown above. Click the List Menu (the icon that shows three horizontal lines) to get a list view instead. If you don't see the icon, it's because you need to swipe

## Search iCloud Drive

**52** Don't forget that iCloud Drive is fully searchable. The search bar is always visible near the top of the the iCloud Drive app. It searches as you type so you will get to your files in seconds.

down slightly on the main screen to reveal it – it's under the search area.

## Tidy up your Drive

**53** One of the most useful things you can do with the iCloud Drive app is organise your files and delete the ones you don't want. If you want to delete files, tap on Select in the top-right corner, and then tap on the files you want to get rid of. Next, tap Delete, then the red text that says 'Delete from iCloud Drive'. The app will warn you that the action cannot be undone.



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# IMPROVE



*“Considering how affordable Affinity Designer is, there are a lot of tools on offer, including pixel editing”*

**Make the finishing touches to your art p48**



## THIS ISSUE'S EASY-TO-FOLLOW GUIDES



### Monitor your Mac's activity

We take a look at the best utilities to keep an eye on your Mac's performance p40



### Fix Apple Music

Apple Music is good, but it's not perfect yet. Here's how to get the most from it p44



### Customise a photo book

Combine Photos, Pages and Preview to create truly unique photo books p46



### Add finishing touches

We explore Affinity Designer's pixel editing tools with Pixel Persona p48



### Banish email craft

Overcome email overload with our tips to help you keep your communications organised p50



### Calibrate your display's colour

Make sure your screen is accurate by creating a ColorSync profile on a regular basis p52



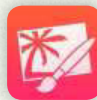
### Make Finder more productive

Learn about the shortcuts that can speed you around OS X's file manager p54



### Take control of notifications

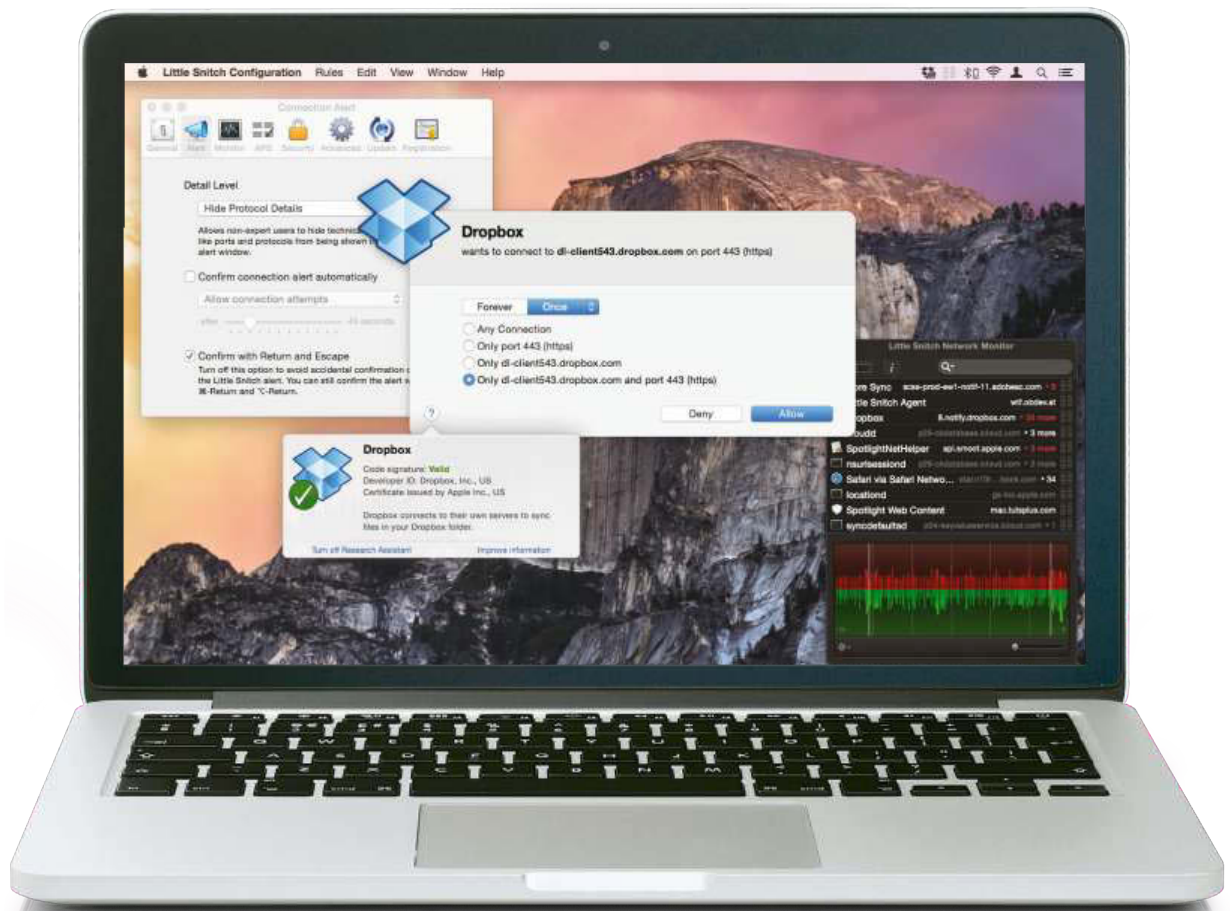
Learn how to make those helpful Mac notifications work better for you p56



### Get more from Pixelmator

Get creative with your pictures using this excellent and affordable app p58





Little Snitch monitors network connection attempts, so you can control app communication with remote servers.

# Monitor your Mac's activity

The best utilities to keep an eye on things and help when things go wrong

## SKILL LEVEL

Taking things further

## IT WILL TAKE

1 hour

## YOU'LL NEED

OS X 10.10 or higher,  
iStat Menus,  
GrandPerspective



Chances are if you took your Mac out of the box when you got it home, powered it up, and then never installed anything on it and never went online, things would rarely go wrong. Also, you'd probably be very bored. But once you add anything on top of vanilla OS X, the potential for problems rapidly increases. Software can clash with the operating system or other software, websites and apps can cause network issues, disk space can run out, and processes can run riot, causing your Mac's fans to go into crazy mode. Furthermore, hardware can and does invariably – if rarely – fail. So what we're saying is that your Mac is essentially a sleekly designed and very stylish time bomb, waiting for the day when it'll

quietly detonate, not so much with a bang, but with a "not working so well today – sorry".

If you're quietly panicking, don't. Most problems can be fixed, and we provide ideas about how to do so later in this tutorial. Moreover, issues can be headed off at the pass. Rather than reacting to problems after they've occurred – frantically trashing files if you abruptly run out of disk space; realising you have

*Once you add anything on top of vanilla OS X, the potential for problems increases*

precisely no charged batteries when your mouse, trackpad and keyboard conspire against you by simultaneously stating they're out of juice – it's smarter and more efficient to get some advance warning. What you need is monitoring tools which lurk in the background, patiently probing your Mac, and enabling you to poke around facts, figures and data as you see fit.

## Built-in tools

Apple bundles some handy tools with your Mac. Visit the Network and Bluetooth panes in System Preferences. Each has an optional menu bar extra that can be activated, enabling you to check on the status of the relevant type of connectivity. With Bluetooth, you'll see a battery indicator if one of your

## QUICK LOOK | iSTAT MENUS

### Main window

**1** The app's main window is used to explore and adjust set up options. Select General or a module from the sidebar to start.

### Module settings

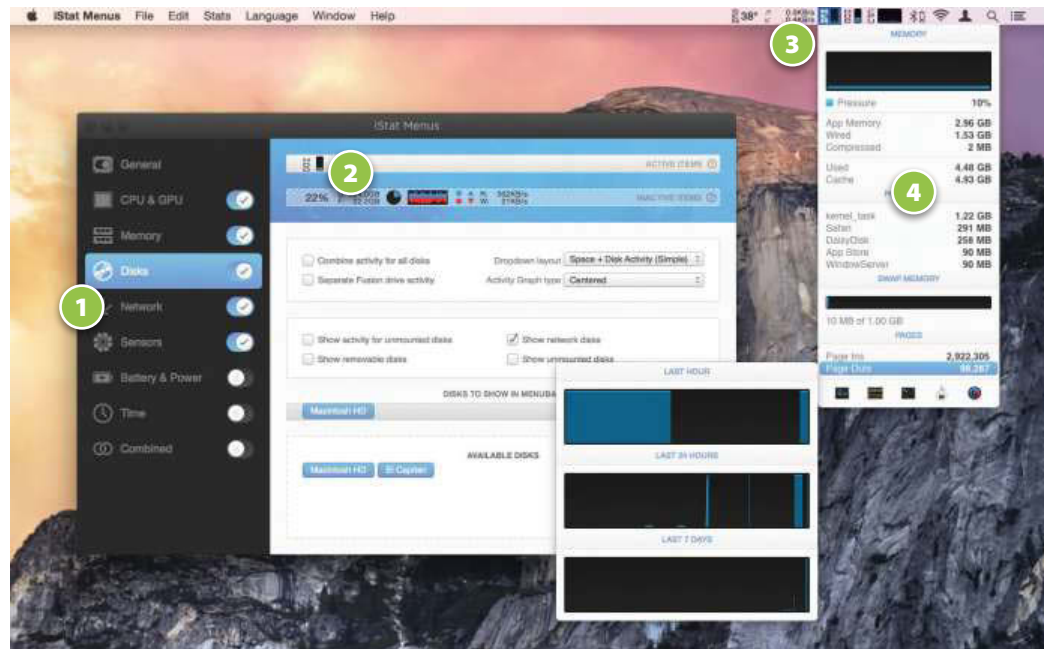
**2** Each module has its own options. Typically, you can drag items between the active and inactive areas, and set which sensor output is shown in the menu bar.

### Menu bar extras

**3** All items ticked in the app's sidebar will be displayed in the menu bar as graphs or stats that periodically update.

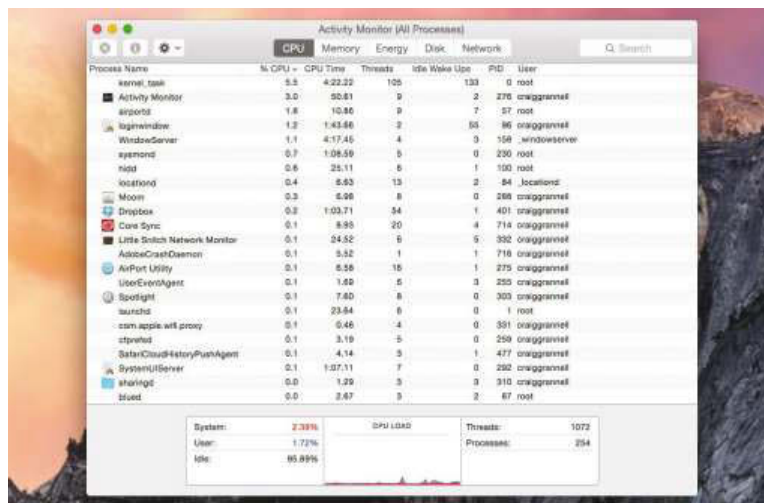
### Finer details

**4** Click a menu item for details. In many places, you can put the pointer over info to see more.



connected accessories is running low on power, giving you ample time to find new batteries. Clicking the menu extra lists the devices, and clearly shows which one needs attention; dipping into the sub-menus details charge levels. As for the Wi-Fi menu extra, it provides a straightforward visual indication of when your network connection is flaky. Once connected, it should remain a solid black. If it keeps flicking to grey and back, and you're in a place where the network connection should be solid, you might need to think about running some diagnostic checks. (Note that should you quickly need additional details about your current network settings, -click the Wi-Fi menu extra. The information in the menu will then be rather more involved.)

Plenty of third-party tools exist for similar and additional scenarios. Some are quite specialised. TG Pro (\$15 – about £10, [tunabellysoftware.com](http://tunabellysoftware.com)) monitors temperatures in your Mac (the 'TG' stands for Temperature Gauge), finds faulty sensors and gives you the option to control fan speeds. (If you're lacking funds to spend on an app, also consider the free Macs Fan Control



**Activity Monitor is useful for quickly finding out when an app or process is causing CPU or memory issues.**

([crystalidea.com](http://crystalidea.com).) Generally, we don't recommend messing with Apple's default fan settings, but it's worth having the option in mind if your Mac's getting very hot, and being able to do something about it if you've got days to wait for a Genius Bar appointment.

### System monitoring

Elsewhere, the best utilities tend to be modular bundles that perform various

tasks. Monity (£2.29, Mac App Store) is an affordable utility designed to monitor CPU usage, network activity, batteries, and disk usage that enables you to drop into Notification Center at any time to see how things are going.

Our favourite product of this kind, though, is iStat Menus (\$18 – about £12, [bjango.com](http://bjango.com)). This comes in the form of an app that's essentially a bunch of settings that control a bunch of icons

## KEEP IT SIMPLE

Don't stuff your Mac full of every single monitoring app you can think of, because that in itself might cause performance issues. Make use of trial versions, decide on your favourites, and then uninstall everything you no longer need.



## CHECK ANOTHER ACCOUNT

If you have an ongoing problem with your Mac being slow or weird, try logging into a fresh account (made in System Preferences) and using it for a bit. If the problem disappears, an app, utility or add-on you use is the likely cause.

that reside in the right-hand side of the menu bar. These icons are highly configurable in terms of appearance, but mostly take the form of tiny graphs. You get more than ample warning about the capacity of your Mac's storage, given that the relevant bar increases in size over a matter of months. Things like CPU, memory and network statuses are perhaps more useful in an immediate sense. If one of those things starts going haywire, you might be able to respond appropriately before it's too late.

When problems do occur, you need to figure out what's happening before working on a plan of attack. Common issues with Macs include sudden sluggishness and/or unresponsiveness, network connectivity slowdowns or dropouts, and a lack of on-board storage. Sometimes, you'll find one problem leads to another. For example, if your Mac has essentially no free space remaining on the volume where OS X is installed, apps will find it much harder to function, which can result in slowdowns and responsiveness problems. But if your cursor's jerking about or it feels like you're wading

**TG Pro monitors temperature in Mac components, and it can adjust fan speeds.**



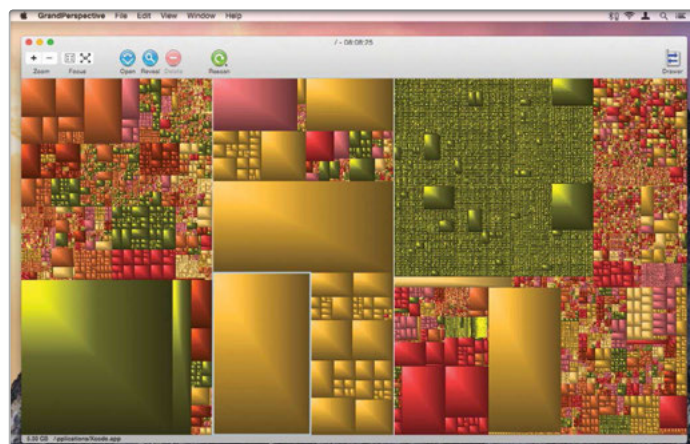
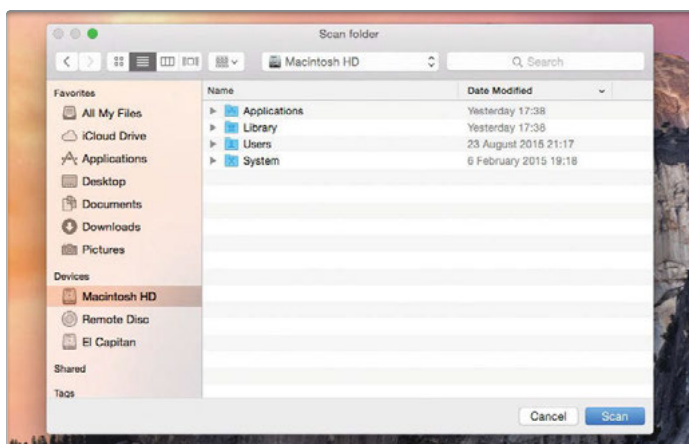
through digital quicksand with every step, that doesn't necessarily mean that low storage space is the problem.

## Fixing your Mac

A good first step is to check in Apple's own Activity Monitor tool, which you'll find in /Applications/Utilities. Here, you can click the tabs to peruse resource usage on your Mac in terms of CPU, memory, energy, disk and network. Sometimes, an app will get stuck, and you'll see the CPU load graph maxed out. Similarly, your Mac may run out of memory, causing the memory pressure

graph to look like a solid red block. Under these circumstances, sort the processes by clicking the '% CPU' or 'Memory' column headings, respectively. If an app is taking up an unreasonable amount of CPU, leave it for a bit to see if it can complete its task. If that doesn't work, select the app in the list, click the cross button (top-left), and then choose Force Quit. Note that red items are entirely unresponsive, and are often the cause of problems; you'll often see this with tabs in Safari (helpfully listed by URL), due to misbehaving websites. If one regularly eats up large amounts of

# HOWTO | SCAN YOUR MAC FOR HUGE FILES



## 1 Start scanning a drive or folder

In GrandPerspective, go to File > Scan Folder and select a folder for the app to scan. This can be at any level on your Mac, but it makes more sense to scan widely rather than select something specific, such as your Downloads folder. Therefore, either scan your user folder, or select the top level of your Mac's internal drive. Click 'Scan' and GrandPerspective will get on with its search. The app has to trawl through every file and folder within the one you selected, so this process can take a while, especially on older Macs. You can still use your Mac in the meantime, and you can cancel the scan if it's slowing things down too much.

## 2 Inspect the scan results

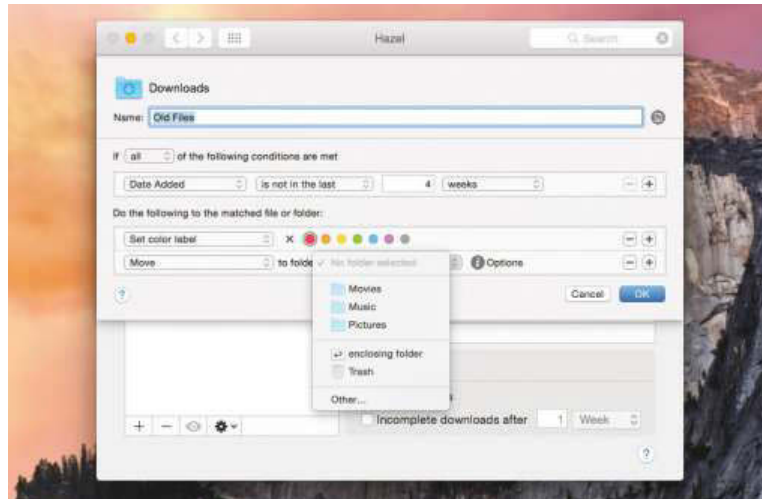
When the scan is complete, your drive's contents are represented by a bunch of rectangles. This is all very abstract, but there is logic to it. The larger rectangles represent bigger files, and items within the same folders are shown within a larger containing rectangle. For example, your Downloads and Documents folders will be found within one specific area of the representation of your Mac's drive, rather than the various files within them being spread randomly about the graphic. Select an item and you'll see its size and filename in the status bar at the bottom of the window, and its parent folder will also be highlighted.

CPU or RAM, stop visiting that site. Similarly, if you find an app often taking huge chunks of memory over and above anything remotely sensible, it might have a memory leak, so check for an update or, failing that, an alternative.

Network problems are typically harder to nail down. Little Snitch (€29.95 – about £22, [obdev.at](http://obdev.at)) can help weed out errant apps, through intercepting their communications with servers and analysing your bandwidth. It's quite an involved app, but its detailed display is relatively easy to get to grips with, and powerful rules provide the means to enforce certain conditions under specific circumstances.

### Getting space back

Storage space is, fortunately, simpler to deal with. DaisyDisk (£7.99, [daisydiskapp.com](http://daisydiskapp.com)) or GrandPerspective (free, [grandperspective.sourceforge.net](http://grandperspective.sourceforge.net)) help analyse your user folder or entire Mac, quickly spotting large files that you can choose to trash. Alternatively, Disk Doctor (£2.29, [fiplab.com](http://fiplab.com)) will automatically trawl your Mac for large files for potential disposal, while Duplicate Zapper (79p, [intego.com](http://intego.com)) will restrict itself to duplicates.



Hazel offers a different kind of monitoring, checking folders and applying rules to the files within.

### JARGON BUSTER

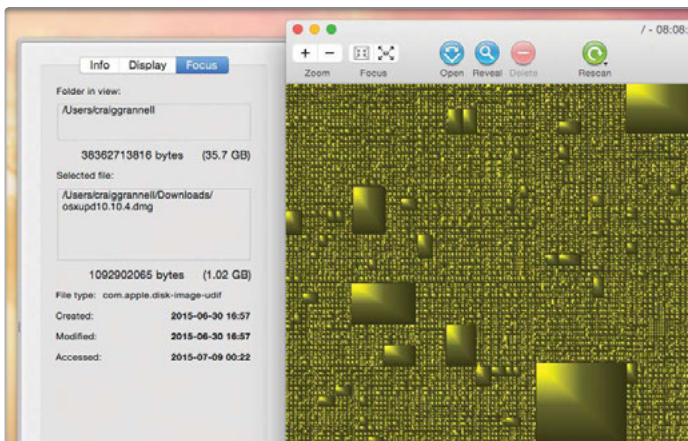
The term CPU means Central Processing Unit, which is the brains of your Mac. If the CPU gets overtaxed, everything grinds to a halt. The trick is to not get to that point, or to quit problematic apps if your Mac's heading for a meltdown.

*Rather than reacting to problems after they've occurred, it's smarter to get some advance warning*

In all cases, take care while using such apps. When in doubt, back up first, and only trash items you definitely aren't going to need in the future.

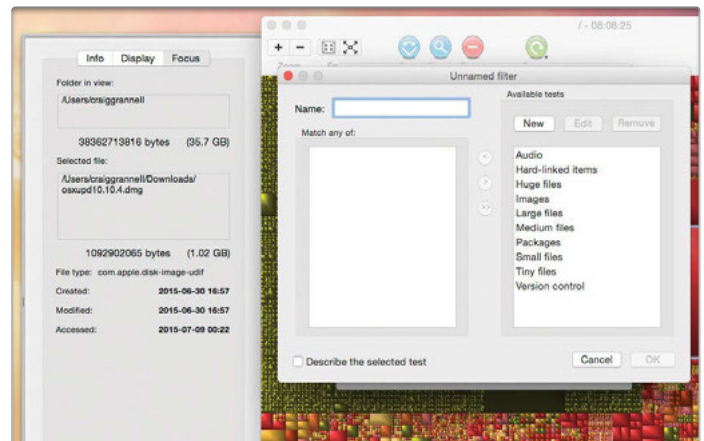
It's also worth considering monitoring specific folders. You can use rules in Hazel (\$29 – about £19, [noodlesoft.com](http://noodlesoft.com)) to keep an eye on the likes of your Downloads folder, filing content by type or date, and periodically emptying the trash, to free up precious space.

**Craig Grannell**



### 3 Get more information

Narrow the window and click Drawer to access further information. Info gives you an overview of your scan, and Focus tells you more about the selected item, including dates when it was created, modified, and last accessed. Use the toolbar buttons to change your view and focus. The + and – buttons zoom in and out of the folder or folders that contain your selection, and the two Focus buttons broaden or narrow your selection. For example, you can select an item in Downloads, and as a comparison use Focus to check the size of the entire folder. (If a containing folder is small, so too will be any file within, even if it takes up most of that folder.)



### 4 Find, delete and filter files

You can delete items directly from GrandPerspective by selecting them and clicking Delete, but only if 'Enable deletion of' in the app's preferences is set to something other than 'Nothing'. Be very careful regarding what you remove – only delete files or folders where you know their function and that you won't need again (or have a copy stashed somewhere). Large apps (OS X and iOS) you no longer use, for example. You can alternatively **ctrl**-click to reveal or open the item in Finder. Should you want to narrow subsequent searches to specific file types, explore GrandPerspective > Filters; set up rules and then use File > Filtered Scan.



# Fix Apple Music problems

Apple Music is improving, but you might need help with common issues

## SKILL LEVEL

Anyone can do it

## IT WILL TAKE

A few minutes to a few hours

## YOU'LL NEED

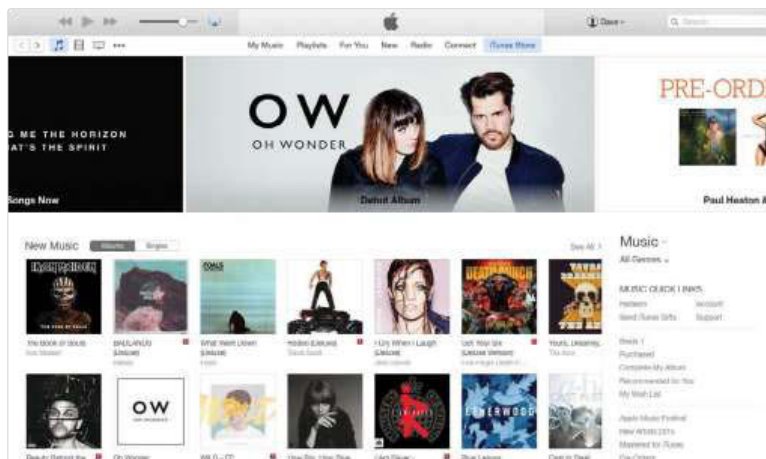
iTunes, potentially a lot of patience



When it comes to teething problems, Apple Music has had more than its fair share. The inconsistent user interface is the least of its problems: unpredictable bugs in playlists, the Beats 1 radio station, and the occasional distressing report of lost metadata and tracks give pause for thought.

The good news is that Apple is on a deadline: Apple Music picked up 11 million users in its first month thanks to its free three-month trial period – users it could lose in October if it doesn't get its house in order. It's already taking steps to fix the service, too: iOS 8.4.1 came out halfway through August, and iOS 9 will be out by the time you read this. The former fixed irritations such as Apple Music ignoring attempts to mark a song playing on Beats 1 as 'loved'.

There are still problems, though. The only way to get offline tracks from Apple Music is to turn on iCloud Music Library; that feature is theoretically brilliant: besides offline tracks, iTunes compares

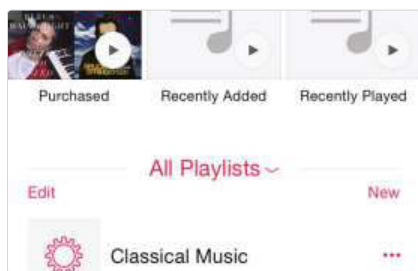


Apple Music in all its glorious, potentially bug-filled glory – though there are things you can do to fix it.

your local library to Apple's own, and it makes matching ones available to play on all devices signed into your iCloud account. However, many people are finding that songs are mismatched, or that they get the wrong versions. If you own an unbleeped version, say, it might be overwritten with a censored one.

Some are also finding album artwork is missing or wrong. Meanwhile, adding music to playlists is still fairly confusing, particularly compared to other services such as Spotify. We're optimistic about Apple Music in the long run. For now, these workarounds should help you to smooth things out. **Dave Stevenson**

## HOW TO | GET APPLE MUSIC WORKING FOR YOU



### 1 Playlists

Custom playlists are a staple of music streaming services, so why does Apple make it so hard to do? For starters, you can't just add the song currently playing to a new playlist. Instead, go to My Music, choose Playlists, then use the very small New button to create a new one. Name your playlist; it will then appear in the list of options when you choose the 'Add to a Playlist' option.



### 2 Reset iCloud Music

If incorrect details show for your local music, open iTunes' General preferences and turn off iCloud Music Library. Choose Store > View Account, sign in, scroll down and click Reset. Confirm, quit iTunes, and reopen it while holding  $\text{⌘}$  and  $\text{⌘}$  to enter safe mode. Select Restore Library and, once the process is finished, check your track data is correct. If so, turn iCloud Music Library back on.



### 3 Reset is unavailable

An infuriatingly common issue is that not everyone's Account Info has the Reset option. If this happens, the best option is to turn off iCloud Music Library, close and open iTunes with  $\text{⌘}$  held, choose Create Library (to make a separate one locally), and turn iCloud Music Library on. Though imperfect, this protects your master library while still using iCloud for multi-device playback.

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# Customise a photo book

Combine Photos, Pages and Preview to create truly unique photo books

## SKILL LEVEL

Anyone can do it

## IT WILL TAKE

15 minutes per page

## YOU'LL NEED

OS X 10.10 or higher



Photos allows you to customise the layout of your photo book pages to an extent, but to really take control of its appearance you can make custom images in Pages instead.

Photos isn't fussy about what kind of image files you can import into it. As long as they're in the right file format, you can import holiday snaps, fine art

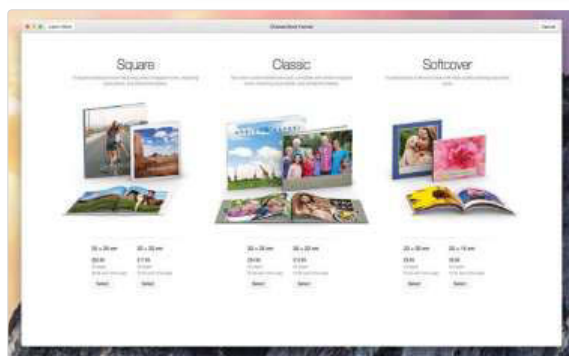
portraits or pages of text rendered as images (JPEG compression can lower the quality of text, so if you're doing this consider using PNG instead).

Unfortunately, Pages isn't capable of exporting your layouts directly as an image file, but it is capable of outputting a PDF, and that's where Preview comes in, quickly and easily converting those PDFs into an image file

format that Photos can handle.

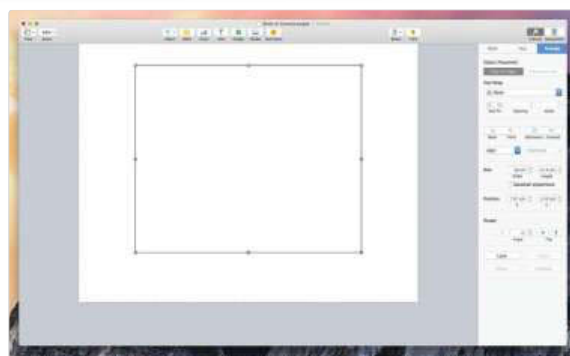
Apple's print products are an often overlooked service. We're concentrating on photo books here, but you could use the same techniques to produce calendars, prints ready for framing or even a jigsaw. Remember to keep the quality settings high when preparing files for print, so you get the best possible end result. **Ian Evenden**

## HOW TO | GET A UNIQUE PHOTO BOOK



### 1 Check dimensions

First, find the page size of the book – online at [www.apple.com/uk/mac/print-products](http://www.apple.com/uk/mac/print-products) or displayed when you create a new book in Photos. In Pages, create a blank landscape document then make it larger than the page size using the Document Inspector. We're using an A3 document.



### 2 Place a guide

Add a new rectangular Shape the same size as your page. This acts as a guide, so you can keep your images inside its boundaries. If you like to use Guides, clicking Show Rulers will allow you to drag them onto the edges of your Shape, your images will snap to them to prevent overflow.

## TOOL SCHOOL

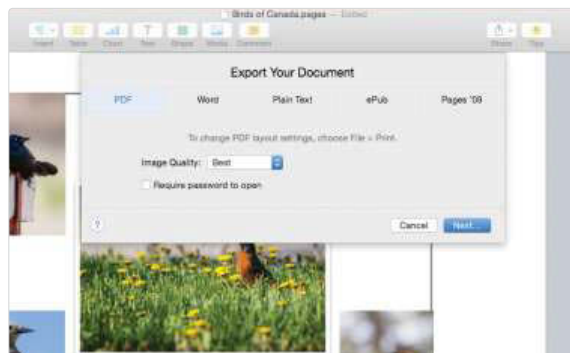
### Rectangular selection

Preview allows you to select only part of your image file, whether you want to crop or apply an effect. It used to be represented by a button on, but in recent versions it's hidden in the Tools menu.



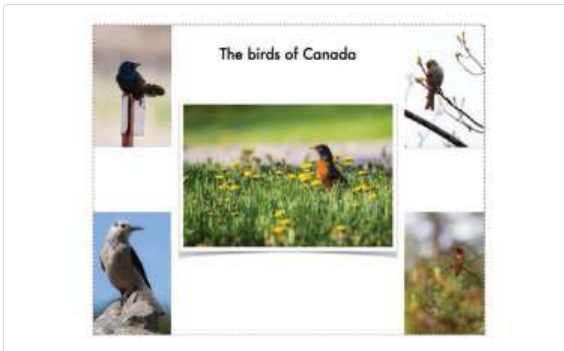
### 3 Lay it out

Inside the Shape, lay out your photos. Add drop shadows or frame lines to your images, overlap them etc. Use the stacking order from the Arrange part of the Inspector to make sure overlaps go exactly the way you want, and Edit Mask from the Inspector's Image pane to crop them.



### 4 Export it

When finished, give your page a title, although it's only useful for separate chapters. Keep the type quite large to maintain readability. Delete the guide frame so it doesn't get printed in your book. Go to File > Export to > PDF... Choose Best image quality and save the PDF to a new folder.



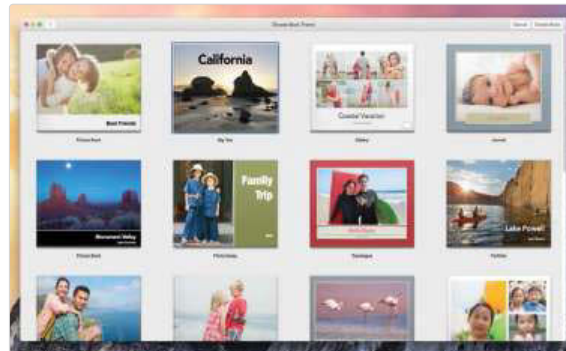
## 5 Convert

Open the PDF in Preview. As we laid out a page that's larger than the book page, we need to crop away the excess white space. Use the Rectangular Selection tool to drag a box, then hit Crop ( $\text{⌘} + \text{K}$ ). Head to the File menu and select Export, then choose JPEG as the format and save to a folder.



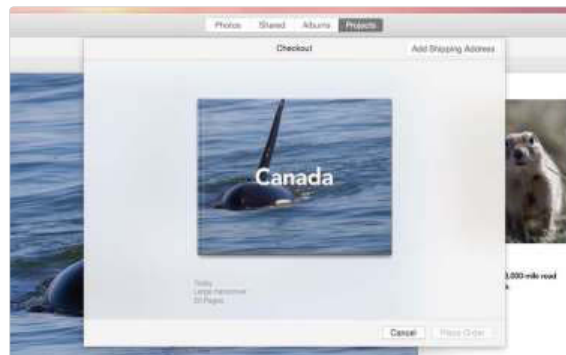
## 7 Add to a book

Adding photos to book pages is as simple as dragging and dropping. For your custom Pages images, make sure '1 Photo' is selected in the Layout Options so it appears across the whole of the page. Use this setting for any full-page photos, adding text if needed using other options.



## 6 Import to Photos

Repeat these steps for every page you want to create. Import your final JPEGs into Photos, and add them to an album. Select a type of book to create a project. Choose the album, click + then Add to Book. Choose the book size, a Theme, and it should appear with photos along the bottom.



## 8 Ready to order

Make sure every piece of placeholder text has been replaced and every space for a photo has been filled – Photos will not let you proceed with missing images but it will if there's placeholder (lorem ipsum) text in the book, although it does warn you. Hit Buy Book to place your order.

## UNUSED PHOTOS



Photos provides an Unused Photos button at the bottom of the interface when creating a print product. This is incredibly useful if you've added lots of photos to your project but haven't yet found them all a home on the pages of your book, as it flags up those you haven't placed.

## THE END RESULT

➤ Apple's photo books are charged to your Apple account and will ship in three to five business days. While they may be convenient, Apple's books are some of the most expensive in what's become quite a crowded marketplace. The process of laying out images in Pages beforehand can be used for any printing service that allows you to upload images to a website before organising them into a book, so shop around to find the best deal out there before you commit.

Competitor services include Photobox, Blurb, Snapfish, the supermarkets and chemists, and while all offer slightly different services photo books are very common now. Even if still decide on an Apple photo book, you might pick up some inspiration along the way.





# Adding the finishing touches

In the final instalment we'll be exploring Affinity Designer's Pixel Persona

**SKILL LEVEL**  
Taking things further

**IT WILL TAKE**  
1 hour

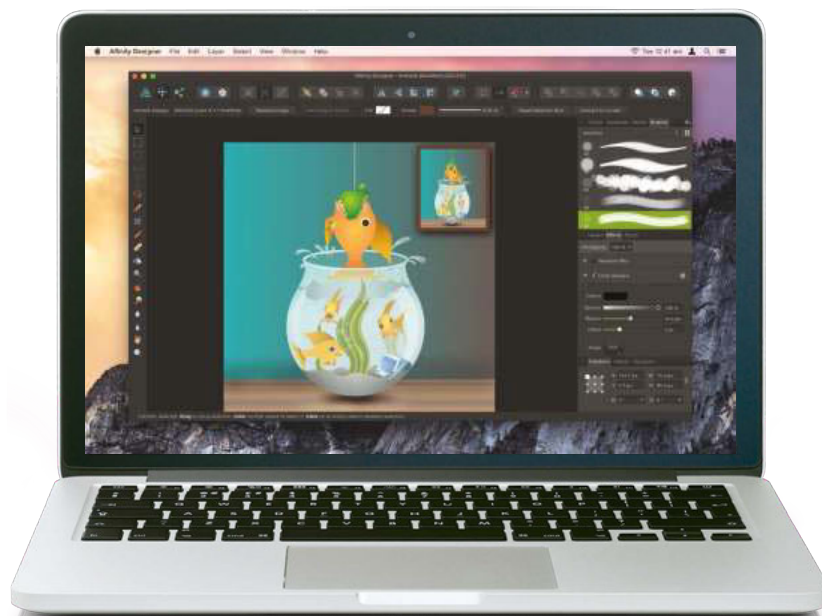
**YOU'LL NEED**  
Affinity Designer 1.3.2



Despite being primarily a vector-based software package, Affinity Designer has an extremely good range of pixel editing tools in its Pixel Persona. In this, the final part in our Designer series, we'll be exploring some of these and discovering just what a complete package Affinity Designer really is! We'll also be learning another method of exporting images – this time we'll be using Affinity Designer's third and final mode known as Export Persona.

Now that we've finished the main image, we can add the last finishing touches to it. This will be a good place for you to experiment with the different things you've learnt over the course of the series. We decided that it would be a nice idea to hang a copy of our fish tank image on the wall and then give it a bit of a shadow.

Over the past few issues you will have hopefully got to grips with Affinity Designer and come to your own conclusions about the software.



Now that we've created our vector image we can move to Pixel Persona to add a few flourishes.

*Now we've finished the main image, we can add the last finishing touches*

Although software such as Adobe Illustrator is a much more complete vector editing package, Affinity Designer will happily give it a run for its money. And when you consider the price difference of the two, Designer becomes a very viable option. **James Robinson**

## HOW TO | FINISH YOUR PROJECT THE RIGHT WAY!

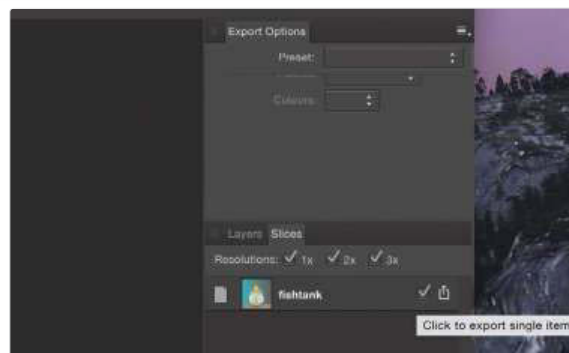
### VIEW MODES

You can view in three different modes. Pixel view mode is a standard resolution. Retina Pixel view mode displays your image as if it's on a Retina screen, while Outline shows just the shapes and line art of your image.



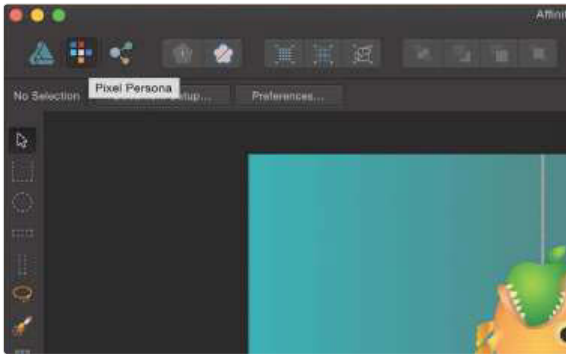
### 1 Export the image

The first thing that we'll do is export the image. There are a number of ways to do this, some we've already covered before, but this time we'll be using Designer's Export Persona. First of all you'll need to select this mode by clicking on the icon on the top left-hand side of the window.



### 2 Exporting multiple resolutions

There are different settings to use when exporting, but if you want to export multiple resolutions for the web then you can do this by ticking the resolution boxes at the top of the layers palette. You can then select the Export icon on the layer to export all three resolutions.



### 3 Switch to Pixel Persona

Once you've exported your image you'll need to switch from Affinity Designer's Export Persona (or if you skipped the first two steps from its default vector-based Draw Persona) to its pixel editing mode, Pixel Persona. The icon for this is to the left of the Export Persona icon.



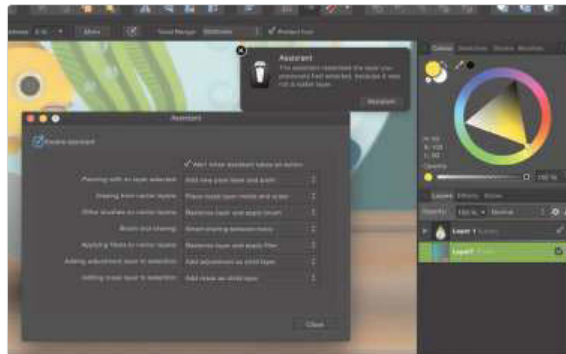
### 5 Add depth to the table

After you've finished using the Smudge Brush Tool you can use the Dodge Brush Tool to lighten the shadow too. You can also give the impression of depth by using the Burn Brush Tool. Select this and 'paint' along the top of the table. This will make that part look darker and further away.



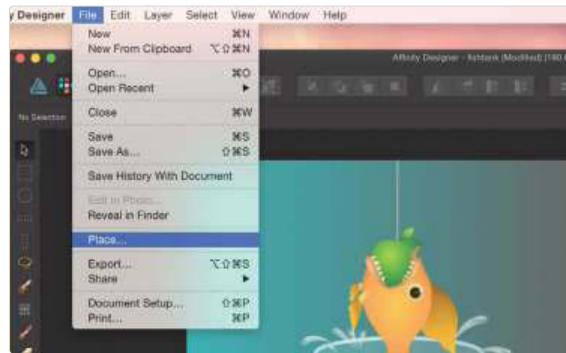
### 7 Scale the image

Once you've chosen your image you'll need to click on the canvas to place it. Then scale it by clicking and dragging on any of the corners. By holding down various keys you can also choose to scale it from the centre (**⌘**), keep its ratio (**⌘**), ignore its snapping (**⌘**) and resize and rotate (**⌘**).



### 4 Blur the shadow

We're going to soften the shadow underneath the fish tank. It'll help if you zoom into that area then select the Smudge Brush Tool icon in the tool palette. Make sure you're on the shadow layer then click to blur the shadow edges. The Assistant tells you which layer will be rasterised.



### 6 Hang a picture on the wall

Once you've finished tweaking your scene with the pixel editing tools it's time to hang the image you exported earlier on the wall. To do this we'll start by placing the exported image within our scene. To do this, go to Place... which can be found in the File dropdown menu.



### 8 Add a shadow

To add a picture frame we gave the image a brown coloured stroke. A nice touch is to add a drop shadow to the frame. Do this by selecting the layer and clicking on the effects tab. You'll then see an option for Outer Shadow. Clicking the triangle will give you options to add the shadow.

## HELPING HAND

Affinity Designer has a warning assistant that will prompt you before you make any changes to a layer that hasn't been rasterised. This can be very useful if you don't want to edit the currently selected layer. The assistant will warn you before you make any changes.

## JARGON BUSTER

Pixel Resolution is the detail that a digital image has. It is usually measured by dpi (dots per inch) and the higher the resolution the sharper an image is and the more detail it has. As a general rule, to print an image it needs to be 300dpi.



# Banish email cruft

Overcome email overload with our tips that help you get on top of it

## SKILL LEVEL

Anyone can do it

## IT WILL TAKE

30 minutes

## YOU'LL NEED

OSX 10.10 or higher,  
a Gmail account



Email. Where would we be without it? Much happier if you believe the numerous surveys that say drowning in the stuff is making us miserable. We're much more positive about the benefits of email, but we also get tons of it and still struggle to keep it organised.

Leaving all your email in your inbox is fine up to a point, as long as your email app of choice has a powerful search feature. Sadly, most don't and so either struggle to find anything at all, or spend ages churning through thousands of messages only to turn up what looks like a completely random selection.

There's another problem with never deleting or archiving email: storage. Whether you keep all your email locally on your Mac or entrust it to a cloud service like iCloud or Gmail, sooner or later you're going to run out of space. If you send or receive large attachments, that'll happen sooner rather than later.

There are a number of different techniques for finding and organising messages in both Mail and Gmail. The latter excels at searching through messages, and so we can use its powerful search operators to identify

Use Smart Mailboxes and rules to organise messages in Mail and easily get rid of anything you don't need.

*Both Mail and Gmail provide tools to deal with messages automatically when they are received*

messages we want to process. Both Mail and Gmail provide tools to deal with messages automatically as they are received. In Mail these are called Rules and in Gmail, filters. We'll show you how to use both to get on top of email.

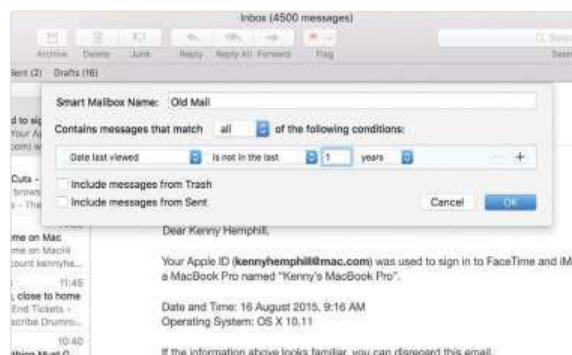
Thankfully, knocking your email into shape is straightforward and doesn't take long at all. **Kenny Hemphill**



## HOW TO | FILTER, ORGANISE AND ARCHIVE YOUR EMAIL

### SEVERAL ACCOUNTS

You can add up to five POP3 accounts to Gmail, and use the processes outlined in this tutorial to manage them, then delete the mail from your local email app. To add accounts, go to <http://bit.ly/1UyhgT1>.



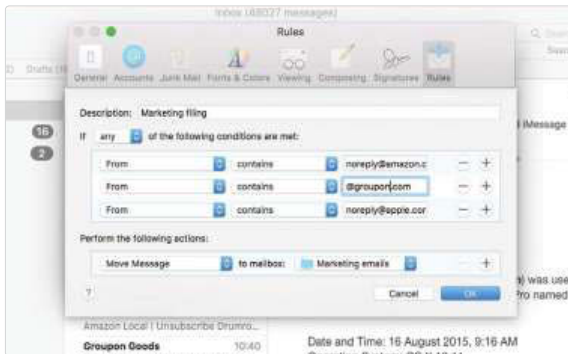
### 1 Create a Smart Mailbox

In Mail, go to Mailbox > Smart Mailbox and then enter a name. We've called ours 'Old mail'. Set conditions messages must meet in order to appear in the mailbox. We've chosen 'Date last viewed is not in the last year'. Press OK and you'll have a collection of messages you're unlikely to read again.



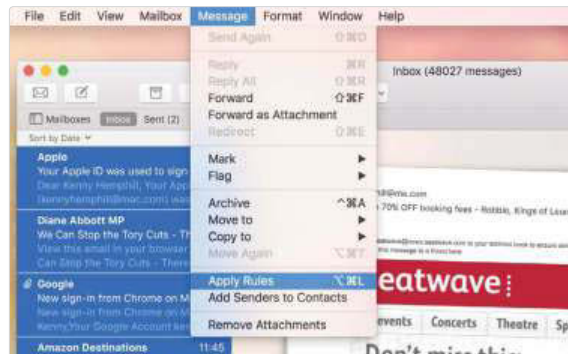
### 2 Archive old mail

Choose Mailbox > New Mailbox, name it, and choose 'On My Mac' as its location. Click on your Smart Mailbox and press **⌘+A** to select all its contents, then drag them into the new mailbox. **⌘+C** on the new mailbox, select Export Mailbox and save the archive. Finally, delete the mailbox.



### 3 Use rules to process new mail

Create and name a new mailbox. We've made one for marketing emails. In Mail > Preferences, click Rules then Add Rule. Set your conditions. We've chosen 'If any' and then listed known email addresses for marketing. In the actions section, we've chosen to move messages to our new mailbox.

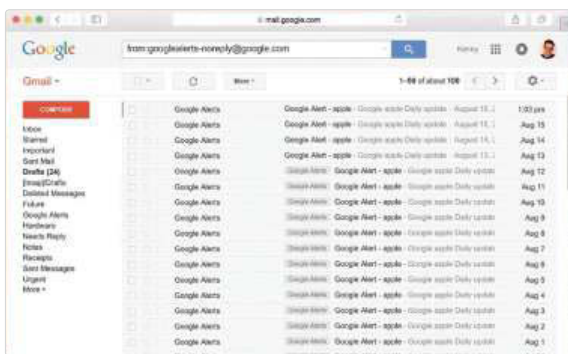


### 4 Apply rules to existing mail

Now you know how to create Rules, set a few up to organise your mail, say by separating work and personal mail into different mailboxes. To apply rules to mail you've already received, select the mailbox where it's stored, press **⌘+A** to select everything in it, then choose Message > Apply Rules.

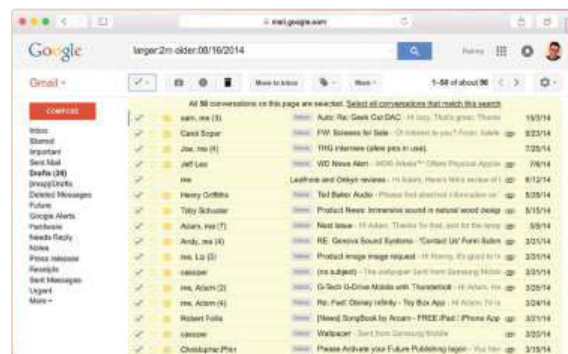
## FOLDERS IN GMAIL

Google no longer uses folders, although confusingly it retains a folder icon when you read a message and allows you to 'move' the message to that folder. What that actually does is apply the label you select to the message and archive it.



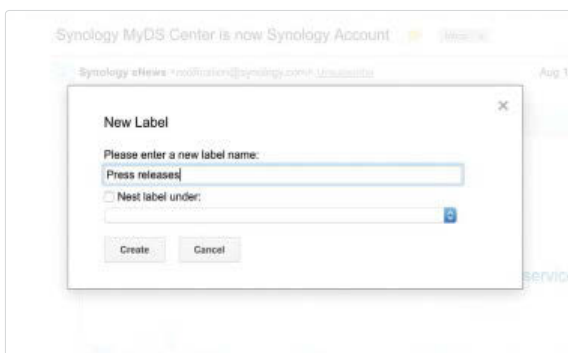
### 5 Find messages in Gmail

Gmail's powerful search uses 'operators' to allow you to easily find messages. For example, type 'from:[email address]' to find every message received from that address. You can then select them all and label or archive them. There's a full list of search operators at <http://bit.ly/1LfcPuV>.



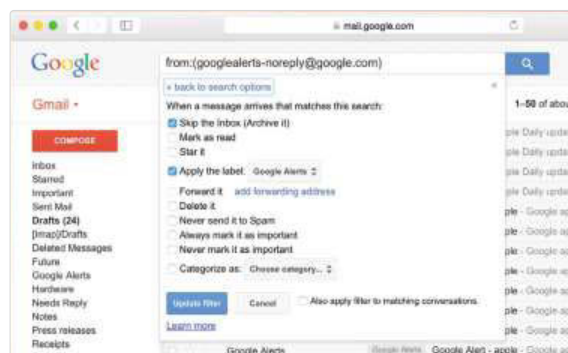
### 6 Delete as well as archive

Google archives messages by default, rather than deleting them; they disappear from your inbox, but they're still using space. Start by entering 'larger:2M' to find large attachments. Optionally, add 'Older:mm/dd/yyyy' (adding a date in US format) to find old items. Select all and delete.



### 7 Use labels

Click a message's checkbox to select it, then click the Labels button, 'Create new', and type a name. Click the cog then Settings > Labels to choose whether the label is shown in the sidebar. Even archived mail retains its label; it will show up when you click the label in the sidebar or search for it.



### 8 Set up filters

To make labels work on incoming mail, not just retrospectively, go to Settings > Filters and click 'Create a new filter'. Fill in the form to choose messages the filter will apply to. Click 'Create filter...' and set actions to perform – say, 'Skip the Inbox' and 'Apply the label' to archive and label messages.

## JARGON BUSTER

Though Rules and Smart Mailboxes are similar, there's a crucial difference. Rules move your messages to wherever you specify. Smart Mailboxes can show messages from different folders, but items are left in their original location.



# Calibrate your display's colour

Make sure your screen is accurate by creating a ColorSync profile each month

## SKILL LEVEL

Could be tricky

## IT WILL TAKE

5 minutes

## YOU'LL NEED

Apple's Display Calibrator Assistant (for basic profiling) or the DataColor Spyder5 (for more advanced profiling)



Are you sure your Mac's screen is working properly? If you do anything with colour, even making basic image adjustments in the Photos app, you need to know you're seeing things as they really are. Even if your screen was set up perfectly in the past, its performance will drift over time and end up misleading you. ColorSync

profiles help your Mac know about any deficiencies of your screen so it can adjust what's sent to the display to compensate. This doesn't alter your images, just the data that goes to your screen, giving you more predictable, trustable results when you print or share images, video and other files.

Calibrating your screen and creating a ColorSync profile is quick and easy, but

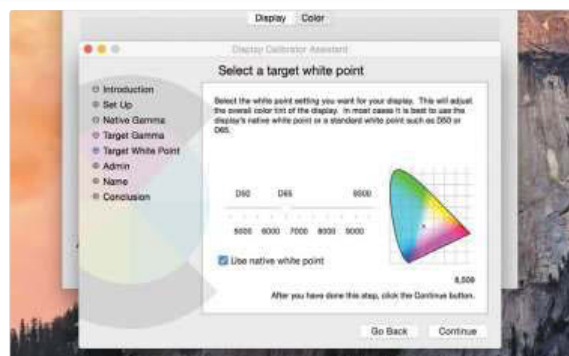
it's something we all forget to do. We'll show you how to do this to a basic level using OS X's built-in Display Calibrator Assistant, and how to use DataColor's Spyder5 calibration tool to produce a more precise, reliable profile. The end result shouldn't be dramatic (well, not unless your screen was disastrously bad to begin with), but the peace of mind this brings is tremendous. **Keith Martin**

## HOW TO | CALIBRATE AND PROFILE YOUR SCREEN



### Use the Display Calibrator Assistant

Open System Preferences in OS X, click Displays, choose the Color tab and click Calibrate to open the Display Calibrator Assistant. With the Expert Mode option checked, follow the on-screen instructions. You'll be asked to match the flat grey of an Apple logo to the tone of black and white stripes. Squinting to blur your vision slightly can help.



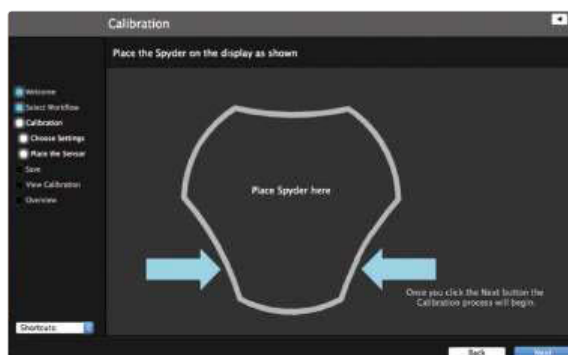
### Save the new profile

When you reach the steps where you select a target gamma setting and a target white point, put a tick in the checkboxes to use the 'native' options unless you have particular reasons to do otherwise. Finally, give your new profile a name. We strongly suggest including the date in the name so you can compare this against profiles you make in the future.

## EYE TEST

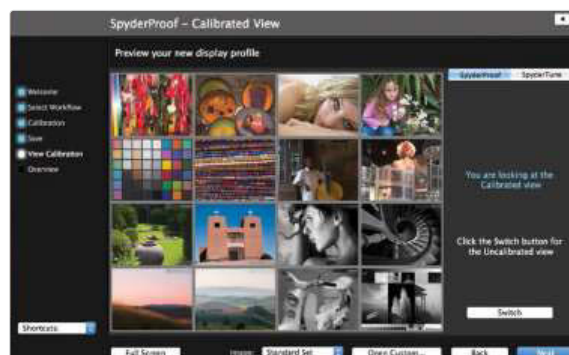
A dedicated hardware sensor will always outperform your eyes, which is why we recommend devices such as the Spyder5.

The basic Spyder5EXPRESS is ample, and you can upgrade the software later if you want more features.



### Use the Datacolor Spyder5

OS X's calibration tool is useful but basic. DataColor's Spyder5 uses a specialist colorimeter rather than your eyes to create a precise, detailed ColorSync profile, giving you much more reliable and consistent results. Run the Spyder5 software, connect the colorimeter, then follow the on-screen steps.



### Saving and comparing profiles

Once the range of colours has been sampled, you can name the profile (with the current date to help comparisons) and then preview it. Switch between uncalibrated and calibrated views to see the difference the profile makes. Use System Preferences > Displays > Color to check against other profiles.



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2,500mAh, 6,000mAh & 10,000mAh power packs

x1 Charges	-	-	-	2,500mAh
x2.2 Charges	x1.4 Charges	x1.8 Charges	x0.5 Charges	6,000mAh
x3.7 Charges	x2.4 Charges	x3 Charges	x0.8 Charges	10,000mAh
				
iPhone 6/6s	iPhone 6 Plus/6s Plus	iPad Mini	iPad Air2/Air	



How many charges in a  
ChargeUp Polymer?

Number of charges are approximate and based on a fully charged power pack. E&OE.

## CYGNETT



# Make Finder more productive

Learn about the shortcuts that can speed you around OS X's file manager

## SKILL LEVEL

Anyone can do it

## IT WILL TAKE

15 minutes

## YOU'LL NEED

OS X 10.10 or higher



Finder fades into the background to the point you often forget it's an application. Yet chances are you use OS X's file manager very regularly, in order to access files and folders, browsing your Mac's drives as you go. On that basis, it makes sense to ensure that Finder is as efficient as possible.

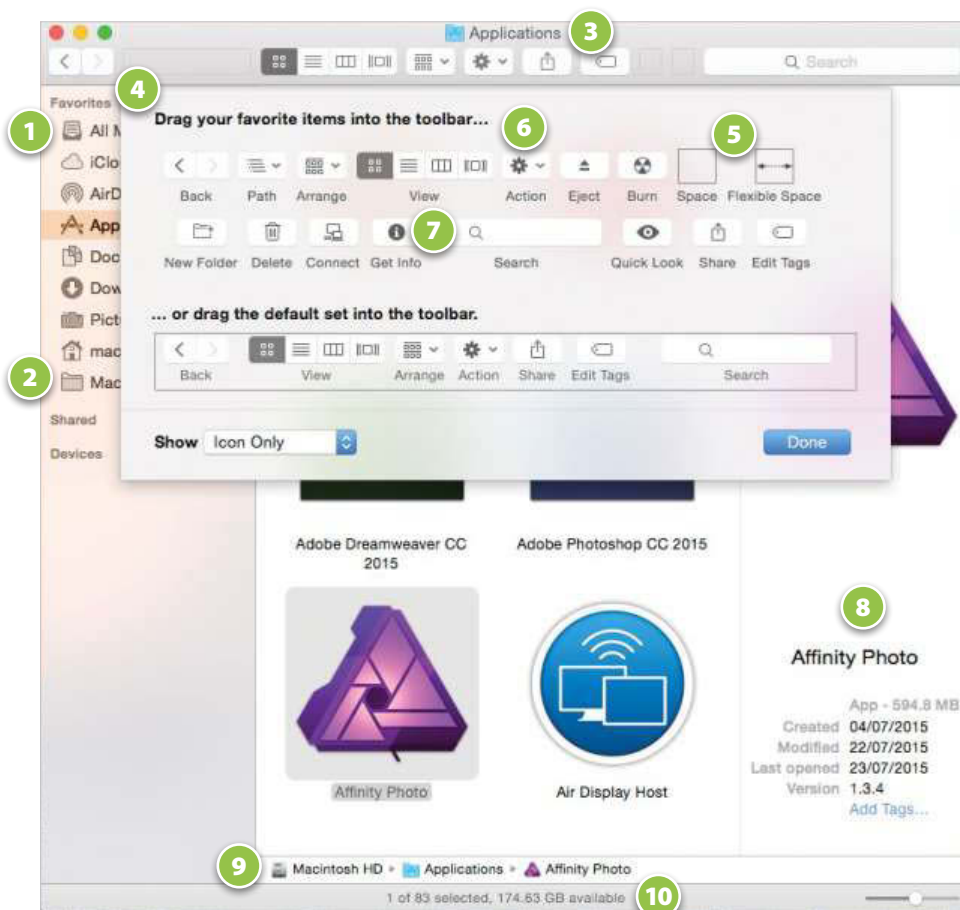
In this tutorial, we're providing a plethora of tips, showcasing many of Finder's shortcuts and features that can speed up workflow. But

there are a couple of things we didn't have space for elsewhere, which we'll cover right now.

In Finder's preferences, two important defaults can be set. In General, 'New Finder windows show' has 'All My Files' as the initial selection, but you can change this to any folder on your Mac. If, for example, you live in Dropbox, it would make sense to select that folder, which would then be displayed as soon as you open a new Finder window. Advanced has a similar option: 'When performing a search' This is set to 'Search This Mac', but can be changed to search the current folder or use the previous search's scope, depending on what you most often do.

Now read on for many more tips about how to get the best out of the humble Finder. **Craig Grannell**

*It makes sense to ensure that Finder is as efficient as possible, boosting your productivity*



## QUICK LOOK CUSTOMISE AND NAVIGATE FINDER

### Sidebar favourites

1 In the Sidebar section of Finder's General preferences, you can define which system folders, shared items, device types and tags you want visible in all Finder windows and Open/Save dialogs.

### Custom favourites

2 Should you want to add custom folders or documents to the sidebar, drag them from Finder. Apps must be  $\text{⌘}$ -dragged.

### Containing folders

3  $\text{⌘}$ -click the title bar of a Finder window and you'll see its containing folders. Select one and the view will change.  $\text{⌘} + \text{⇧}$  - select one and the folder opens in a new tab.

### Toolbar customisation

4  $\text{⌘}$ -click a Finder toolbar for options to show icons-only, text-only or both text and icons. You can also access the 'Customize Toolbar' sheet for adjusting Finder buttons/spacing.

### Spaces and groups

5 Finder toolbar items are positioned, added and removed using drag and

drop. Use spaces to make uncluttered and logical groups of buttons.

### Actions

6 The Actions button provides fast access to Finder commands, such as duplicating items and arrange options.

### Get Info

7 The Get Info button mirrors File > Get Info ( $\text{⌘} + \text{I}$ ), providing a window with details for each item. Use  $\text{⌘} + \text{⇧} + \text{I}$  on multiple selected items and their Get Info window is grouped.

### Preview column

8 You can add a preview column to all Finder views by using View > Show Preview ( $\text{⌘} + \text{⇧} + \text{P}$ ).

### Path bar

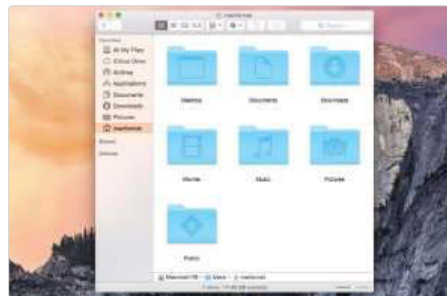
9 The path bar is akin to the containing folders menu, except you can drop items into any of the small folders. Double-click to open a folder.  $\text{⌘}$ -click for the Open/Show options.

### Status bar

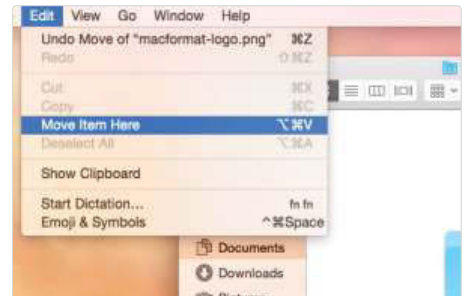
10 This details the number of items in the current folder and space available on the drive. In Icon view, you get an icon size slider.

**HOWTO** | SPEED UP WORKING IN FINDER**1 Use the Go menu**

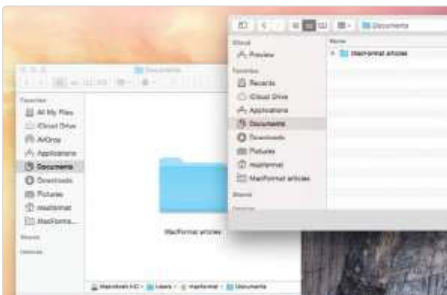
You can stash favourite places in Finder's sidebar, it's quicker to use keyboard shortcuts though. Click the Go menu to see all examples. Note 'Library' is hidden in Yosemite, but can be accessed via Go by holding  $\text{⌘}$ . Drag the folder to the sidebar for faster subsequent access.

**2 Get around faster**

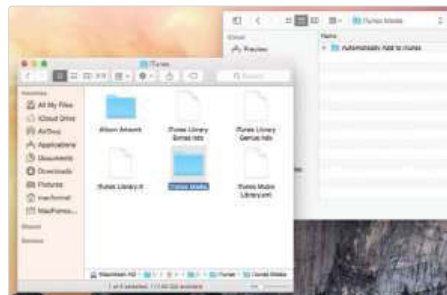
Navigate Finder windows using the keyboard. Tap out letters to jump to items beginning with those characters. Use the cursor keys to change the currently selected item. Use  $\text{⌘} + \text{⬆}$  to go up one level in the folder hierarchy, and  $\text{⌘} + \text{⬇}$  to open a selected folder.

**3 Copy, paste and move**

When filing a document, it's very easy to drag it to the wrong place. Select the item you want to move in Finder and then use Copy ( $\text{⌘} + \text{C}$ ). Find the target location in Finder and then either use Paste ( $\text{⌘} + \text{V}$ ) to send a copy, or Move Item Here ( $\text{⌘} + \text{⇧} + \text{V}$ ) to move the item.

**4 Access favourite places**

What you place in Finder's sidebar impacts what you see in Open and Save dialog boxes. In both cases, favourites (along with shared items and devices) are mirrored. You can reorder, add and remove individual items from the sidebar directly from within dialog boxes.

**5 Switch views**

If you drag any item to the file list in a dialog box, the folder shown in the dialog box will switch to the location of the item; and many keyboard shortcuts – including for views and Go menu location shortcuts (such as  $\text{⌘} + \text{⇧} + \text{D}$  for Desktop) – work there.

**A CLASSIC LOOK**

You can hide the sidebar, toolbar and path bar. Use the View menu or related shortcuts to achieve this. Note that with the toolbar hidden, you can't use tabs.

**6 Change your view**

Each view type – Icon, List, Columns, Cover Flow – has its own keyboard shortcut, as do arrange types, such as listing by name, date modified or size. Since certain view types work best in specific circumstances, being able to quickly switch between them saves time.

**7 Explore view options**

With any Finder window open, go to View > Show View Options ( $\text{⌘} + \text{J}$ ). Options for the current window are shown. These are specific to the current view. For example, in Icon view, there's a slider for icon sizes. Arrange/sort options can be defined for individual folders.

**8 Sort out your Desktop**

Use View Options to sort everything by name, and use a fairly big icon size, to make things clickable. In Finder's General preferences, define whether or not you want hard disks, external disks, optical media and servers to appear on your Mac's desktop.



# Take control of notifications

Learn how to make Mac notifications work better for you

## SKILL LEVEL

Anyone can do it

## IT WILL TAKE

30 minutes

## YOU'LL NEED

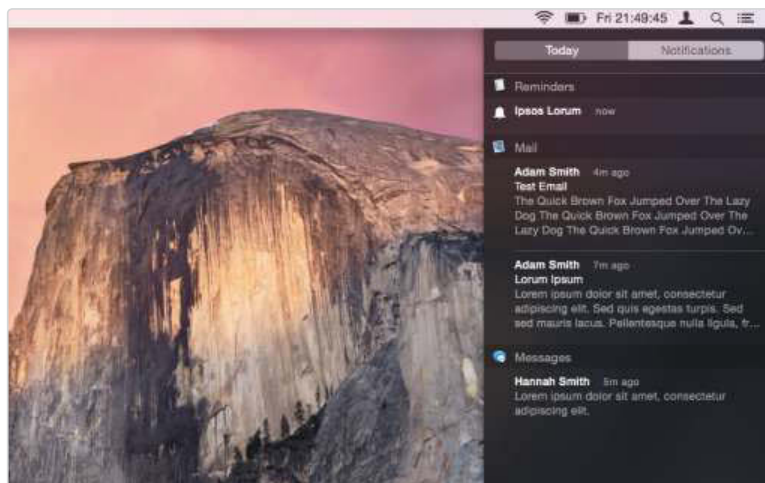
OS X 10.10 or higher



Notification Centre is one of the most important aspects of OS X, and yet it is rarely used to its full potential. Hidden at the right-hand side of your screen, Notification Centre has all but replaced the Dashboard feature that was introduced 10 years ago in OS X Tiger. It gathers both widgets and alerts in one sidebar, accessible by clicking the list-like icon in the top-right corner of the screen or swiping inwards with two fingers from the right edge of a trackpad, and is vital to staying on top of things – as they happen or later on.

The sidebar is divided into two tabs. The Today view manages your domestic information: the date, the weather, your daily calendar, and the stock market. Its contents can be customised by clicking the Edit button at the bottom, so you can add widgets provided by Apple – such as the Social widget that gives you a quick way to send texts, tweets and Facebook status updates (provided you've added your login details in System Preferences' Internet Accounts pane) – and with third-party apps such as Wunderlist, Fantastical and Deliveries. Many widgets can be configured by putting the pointer over them and clicking the 'i' that appears at its top-right corner. You can add locations to the Weather and World Clock widgets and companies to the Stocks section.

You can schedule Do Not Disturb to mute notifications between two times, and so banners and alerts don't distract you.



Notification Centre enables you to manage alerts that come from your Mac's apps and some websites.

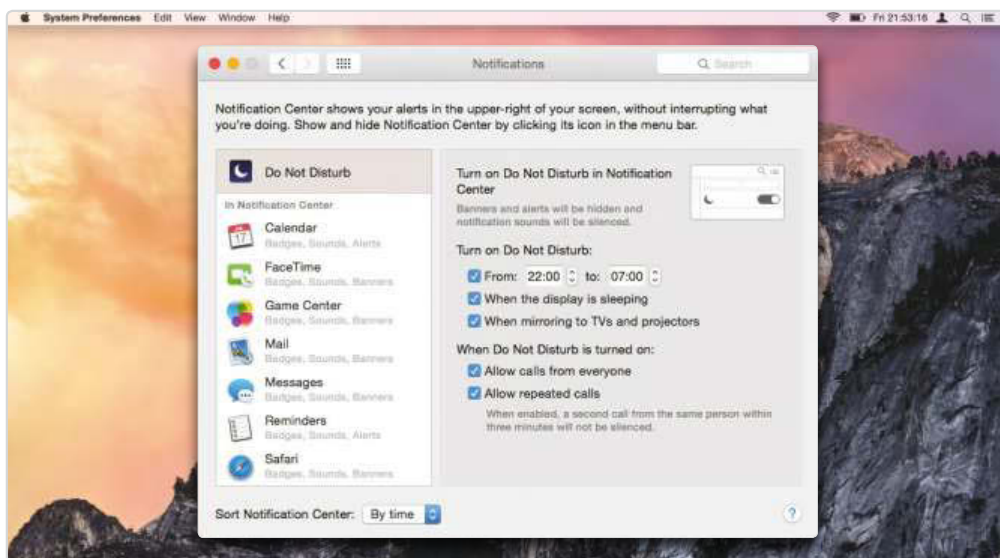
The second tab is for notifications, and it manages every bit of information sent to you by apps, such as emails, reminders, iMessages and calendar events. When a notification is shown, sliding in at the top-right corner of the screen, it comes in one of two formats:

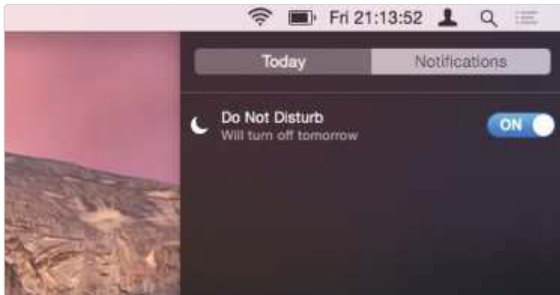
*Notification Centre has all but replaced the Dashboard that was introduced in OS X Tiger*

banners disappear automatically after a few seconds; alerts, in contrast, stay on the screen until they are engaged with. In System Preferences > Notifications, you can specify whether notifications appear as alerts or banners on a per-app basis. In both cases, you can control an app directly from a notification; for an iMessage, say, you can choose to reply, which opens a text box in the alert, rather than going to the Messages app, or you can mark the message as read, which dismisses the notification.

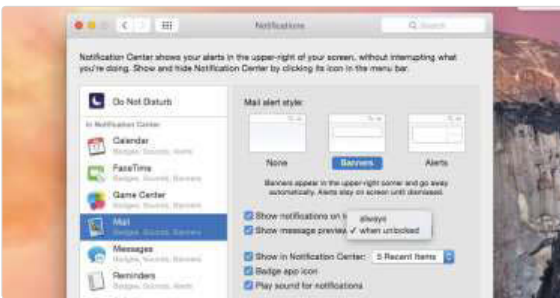
Any item that is not engaged with gets added to the Notifications tab in Notification Center (unless you have turned off 'Show in Notification Center' for that app). Items in that tab are listed chronologically, but also grouped by app. For example, if you receive a text message at 12:00, followed by an email at 12:05, the email message will be shown above the text message. However, if you then receive another text message at 12:10, both the recent text message and the older one will be placed above the email. So, no matter how many notifications you get from different apps, they remain grouped.

Of course, notifications can be suppressed. Do Not Disturb hides all banners and alerts until midnight, or until you turn it off. It can be scheduled to turn on for part of the day, so you can keep your Mac on overnight without noisy interruptions. **Adam Smith**

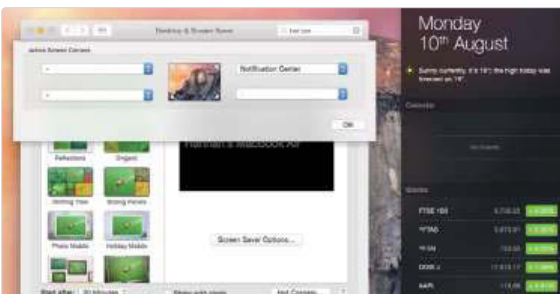


**HOW TO** | GET MORE FROM NOTIFICATIONS**1 Quickly activate Do Not Disturb**

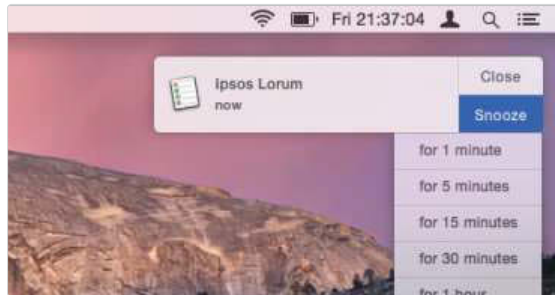
Saving a few seconds can be important, so rather than wasting time opening Notification Centre and scrolling to the top of its Notifications tab in order to activate the Do Not Disturb mode, you can also activate it instantly by -clicking the Notification Centre icon in the top-right corner of the screen. The icon is greyed out when Do Not Disturb is active, and black when it is not.

**3 While your Mac is locked**

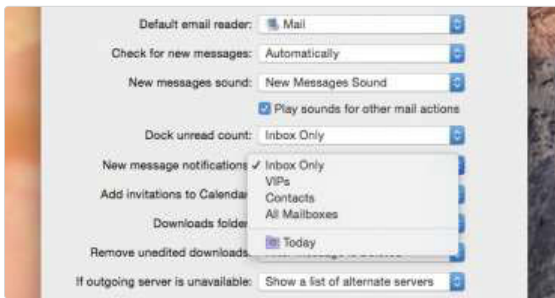
Select an app in the Notifications preferences pane and you'll see a checkbox that decides whether its items appear on the Lock screen (shown when your Mac wakes and 'Require password...' is enabled in Security & Privacy). Some apps, like Messages and Mail, can preview message contents on the Lock screen ('always'), only at the Desktop ('when unlocked'), or you can turn off previews altogether.

**5 Open using a Hot Corner**

Notification Centre can be opened just by moving the pointer to a corner of the screen. Go to System Preferences > Mission Control, click 'Hot Corners...' and then click one of the drop-down menus. Optionally, hold any combo of and while doing this to require those keys to be held too, which avoids accidentally triggering the action.

**2 Respond from a notification**

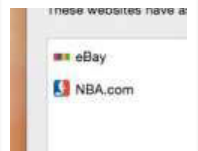
Some notifications provide actions that are specific to the originating app. For example, if you hold down the Snooze button in an alert from Reminders, a drop-down menu will appear. You can then set the amount of time you want to pass before the alert activates again, giving you more flexibility than the automatic 15 minutes that are assigned if you simply click the Snooze button instead.

**4 Settings you might miss**

Some apps provide extra control of their notifications, though not always in the Notifications preferences pane. In Mail's preferences, for example, click General and you'll find options that specify which messages trigger notifications: all new messages; just those in your inbox, rather than moved elsewhere by rules; those sent by your designated VIPs; or those from any of your known contacts.

**6 Sort notifications manually**

To have items in Notification Centre's Notifications tab listed in a specific order, go to System Preferences > Notifications and change the sort order (at the bottom-left of the pane) to 'Manually'. You can then set the order of your applications by dragging and dropping their icons in the left-hand pane to prioritise your most important apps.

**HELPFUL SITES**

You can set up certain websites to send you notifications; the New York Times, for example, will offer to alert you to new content, while eBay will send you a notification when changes are made relating to your account.

**JARGON BUSTER**

The widgets in Notification Centre's Today tab are a type of Extension, and in addition to managing them from the Edit button at the bottom of the tab, you may find it easier to reorder them in the Extensions pane in System Preferences, especially if you have many of them installed.



# Get more from Pixelmator

Get creative with your pictures using this excellent and affordable app

## SKILL LEVEL

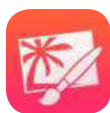
Anyone can do it

## IT WILL TAKE

30 minutes

## YOU'LL NEED

iPad, Pixelmator



The Photos app on your iPad provides a handful of useful editing tools, enabling you to make basic tweaks to your images. You can crop and rotate an image, apply a selection of preset filters, dial in brightness and saturation... and that's about it. If you want to get creative with your imagery, Pixelmator (£3.99) is an

ideal next step. This fast, easy-to-use and affordable image editor provides a raft of tools, including brushes and layers, text and shapes, retouching, distortion and more. It's great for taking your photos to another level – or even creating an image from scratch.

The app is simple to use, with all the tools accessible from a few menus. It plays nicely with the Photos app,

loading images directly from your photo library and Camera Roll, and you can even link it to the Photos app, enabling you to make basic edits there, and then take your photo directly into Pixelmator. This workflow limits you to using Pixelmator's Effects menu, although you still have plenty of creative freedom. Tapping Done sends you back into your iPad's Photos app. **Steve Jarratt**

## VISUAL GUIDE | FINDING YOUR WAY ROUND PIXELMATOR

Pixelmator has a clean look that's right at home on iOS, making it easy to use

### Icons

**1** The paintbrush icon brings up the main Tools palette with access to the app's creative tools. The + icon enables you to add images, layers, text and shapes. The cogwheel brings up the app settings and also includes image setup. The share icon lets you save and share your images.

### The Tools menu

**2** This is the main access point to Pixelmator's toolset, which features brush-based tools, colour adjustments, a variety of effects, plus tools for creating selections and cropping. Format provides additional control over individual layers.

### The layers palette

**3** Pixelmator comes with a fully-formed layer system, which enables you to duplicate images, overlay effects and add text and shapes. Tapping a layer also brings up a menu for additional control over opacity (how transparent or not a layer is). Plus blend modes and context-sensitive options such as stroke, drop shadow, reflection and so on.



### Add Effect presets

**4** Tapping the Add Effects menu brings up a palette of 14 different options, including Blur, Sharpen, Hue & Saturation, Light Leak, Bokeh, Focus and Kaleidoscope, all with their own controls. The Add Effects menu also offers a small, live preview of your image with each effect applied, so you can see what your image will look like before you set about making changes.

### Images

**5** Tap here to close the current image and go to Pixelmator's Image Gallery. This enables you choose a new image to work on: this can be from scratch, from iCloud Drive or from the Photos app. You can also use Images to open an existing project (images are saved with layer information intact) and use Images to rename or delete existing files.

### Undo

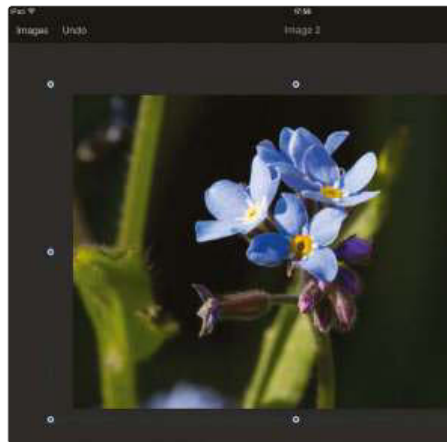
**6** Pixelmator has a whopping 50 levels of undo available, enabling you to experiment freely, knowing that you can always backtrack through your work if you need to. Of course, with the layer system it's always wise to save a copy of your image as a standby just in case you do happen to run out of undos – although that's only likely to happen with very complex images.

## HOW TO | LOADING, USING LAYERS AND ADDING EFFECTS



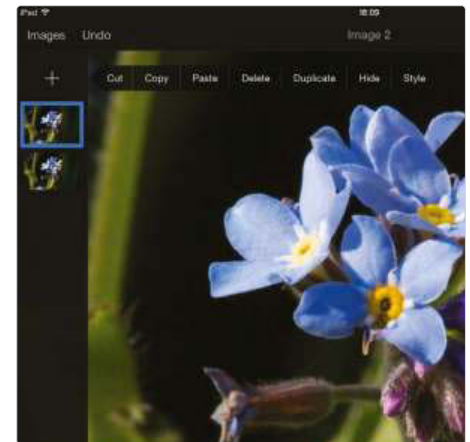
### 1 Load an image

Time to fire up Pixelmator and load an image. There are a variety of ways of getting digital photos onto your iPad: You can load them from your camera via USB and an adaptor. You can also sync or share them using iTunes, My Photo Stream, iCloud Photo Sharing, iCloud Drive and even Dropbox. We also suggest Files App (<http://getfilesapp.com>), which is useful for sharing files between iOS and OS X. In Files App simply use 'Open in...' and choose Pixelmator.



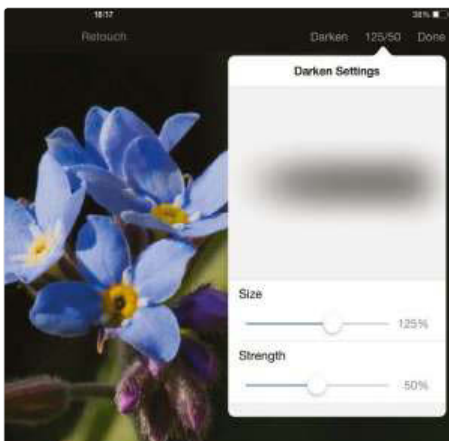
### 2 Image setup

We've chosen a macro shot of some flowers – it's an OK image but lacks interest. You have the option of using Image Setup to define the size in pixels, or you can tap once on the image to bring up handles to manually resize it and pan around the canvas. To rotate, just place two fingers on either side and move them in opposite directions. Once you have the image set up as you'd like, zoom in and out and pan around with finger-pinches and by dragging.



### 3 Duplicating a layer

Even though Pixelmator has an undo feature, it's useful to make a duplicate layer to work with. Tap anywhere on the image and hit Duplicate. Now if you swipe in from the left, you'll see the layers. The new layer has been created and sits on top of the original with a blue outline. To reorder layers, tap and hold, then drag them to their new position. To cut, copy, delete or hide a layer, tap to highlight it, then tap again to bring up the layer menu.



### 4 Retouching the image

Let's bring out the blue flowers and darken the green stem. Tap the paintbrush icon to bring up the Tools menu, hit Retouch and select Darken. This brings up a brush with which to paint over specific areas. To adjust the size and strength, tap on the numeric values (top-right); this brings up a menu showing the brush stroke. Always start with low strength values until you get a feel for what the tool does. Next we'll do the same thing, but using the Saturate brush to make the blue petals more vivid.



### 5 Adding effects

Hit the + symbol (top-right), and in the second tab, select the dark rectangle to add a solid black layer. In the layers panel, tap it, select 'Style' from the menu and change the Blending from Normal to Screen. Now we can see the flowers again. Open the Tools menu and tap Add Effects; this brings up a menu of 14 options for adding blur, bokeh and more. We're going to use the Bokeh menu to add a sparkly, ethereal vibe. Use the two black handles to position, rotate and scale the Bokeh image to your liking.

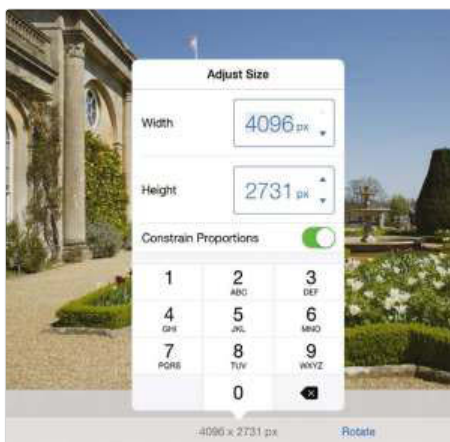


### 6 Using Blending modes

Hit Done to apply the effect, then tap the black layer which has the Bokeh image. In the menu, tap Style and adjust the Opacity to around 50%. You can also play around with the Blending modes – Color Dodge also gives a nice effect in this instance. To finish the image, we added another Bokeh layer, called Magnolia, then reduced the opacity and added a Blur effect. This brings up a small wheel, which you dial up or down the amount of blur. We then added a Hue & Saturation effect.

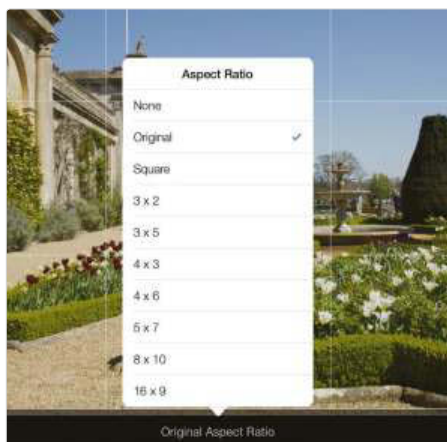


## HOW TO | CREATING A VINTAGE PHOTOGRAPH



### 1 Changing image size

We've copied a 4,096x2,731-pixel photo using Dropbox, and our first step is to make it more manageable. To alter the size, tap the cogwheel to bring up the Settings panel, then hit Image Setup. At first it doesn't do anything: you need to tap the text saying 4,096x2,731 – this opens the Adjust Size panel. Here you can key in any size you need, and constrain its proportions if need be. We're going to reduce it by half. Once you're happy, tap anywhere off the panel to close it, then hit Apply.



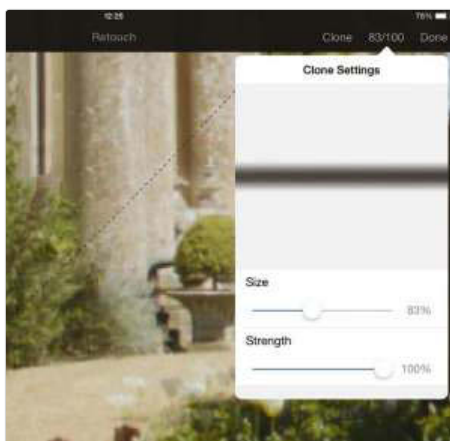
### 2 Cropping the image

For our vintage-look image, we need to make some changes. There are people dressed in contemporary clothing on the right and a guy by the pillar. Let's get rid of them. First of all, it's easier to just crop the family from the edge of the image; to do this tap the Paintbrush icon and select Crop. You can drag the crop window around or adjust it using the handles in each corner, or by dragging on an edge. You can keep the original aspect ratio or choose a different one using the Aspect Ratio options at the bottom.



### 3 Using the retouch tool

Now to deal with the guy in the red top using Pixelmator's intelligent retouching tool. Tap the paintbrush icon to open the Tools panel and select Retouch. To start, we'll try using the Repair tool. Like the other brush tools you can adjust the size by tapping the numerical values. We'll zoom in on the image, and use a fine brush to paint over the figure. It's a good idea to cover the figure in one go. However, we did one main paint stroke, then some smaller ones to remove any bits we'd missed. Tap Done to close the tool.



### 4 Cloning in details

The Repair tool has done a pretty good job, but we can improve it by cloning in any missing detail. Open the tools palette again, open the Retouch options then select the Clone tool. Place the black marker at the end of the 'rope' where you want to copy from, then simply paint where you want to copy to. Here we've duplicated a few bushes to tidy up the area by the pillar. We also cloned out the entrance sign and painted in some new gravel. We even manage to remove some of the people by the fountain with the Repair tool.



### 5 Colour correction

Now let's make the photo look aged. You can give it the popular 1970s Polaroid look by going into the Tool palette, and tapping on Adjust Colors; the Sepia preset does a pretty good job on its own. But we want a look that's even older. First we'll add the Warm preset and then decrease the Saturation level slightly, and increase the Contrast. Hit Apply, then go into Add Effects and use the Hue & Saturation to give the photo a faded brown-purple tone. To control individual colour channels, tap the colour dots at the bottom and Hit Apply.



### 6 Add the final touches

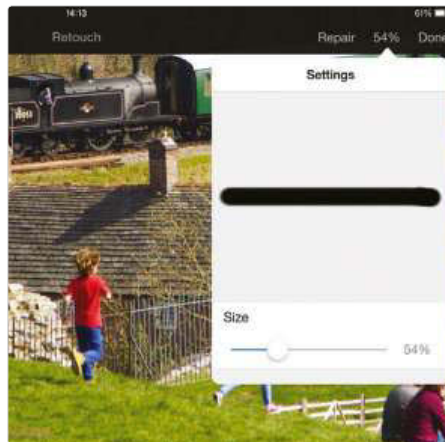
Staying in the Effects menu, we then apply a Vignette effect with a value of 150%. Next we'll add a new solid black layer set to Screen mode. This is so we can apply Light Leak effects and some speckles, and tone down their colour and saturation separately. Now we'll add the 'Blurry' frame template. To use it, we had to save our vintage picture to back to Photos. In Pixelmator's gallery, hit the + icon (top-left), and from the Create Image menu select the frame you want. Tap the + icon (bottom-right), and import your edited image into the frame.

## HOWTO | CREATING A TILT-SHIFT EFFECT



### 1 Adjusting the colour

First, we'll load our train photo. The scene was shot on a bright sunny day, but it's a little flat for our purposes, so open the Tools panel and select Adjust Colors. We want the image to be vivid and 'hyper-real', so let's increase the Contrast and Saturation by 20% each. Then move the Temperature slider by 10% to warm things up a bit and tweak the curves to brighten the midtones. Tap Apply. If you're not confident with colour channels, the Vibrant preset in Adjust Colors will do much the same thing.



### 2 Object removal

For our tilt-shift photo, let's tidy things up a bit by removing the kids running down the bank – these will look too much like real people and will distract the eye from the train. In the Tools palette, select Retouch and then the Repair icon. Using a smallish brush, paint over each figure, making sure to completely cover them. Pixelmator does a good job in removing them from the scene – fortunately, these areas will be blurred in the final image, so there's no real need to use the Clone tool to tidy up.



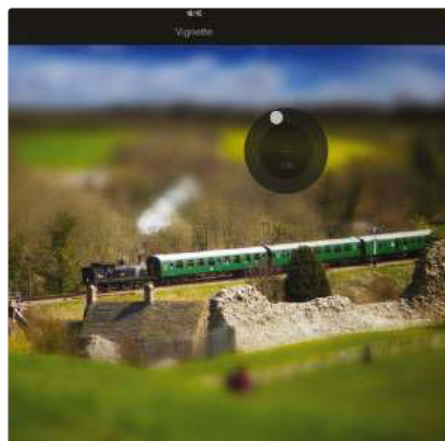
### 3 Replacing the sky

Our sky is a bit boring, so we found a nice replacement and added it as a layer beneath the steam train. We then used the Tools > Select > Magic Wand to select our original sky. The region gradually turns grey as you move your finger, so you can gauge how much to select. It's then easy to pick an Erase brush and paint out the sky. To check your progress, Hide the layer beneath to see the alpha channel. Now to work on both layers as one, tap and hold the sky and drag it on to the train layer to group them.



### 4 Add the tilt-shift effect

For the tilt-shift effect, go into the Tools palette and select Add Effects > Miniaturize. There are two black handles: the large one shows the 'focal point', while the smaller one determines the extent of the effect. We want a narrow depth of field, so let's put the focal point on the train, keep the handles close together and crank it up to 100%. To make even the effect more extreme, we apply the effect again. You could also duplicate the layer and apply the effect to the uppermost version – then dial back the opacity if it's too much.



### 5 Vignetting and noise

Our image is nearly complete. In Tools > Add Effects, we'll throw on a Vignette set at 70%, which helps sell the tilt-shift effect and draws the eye to the centre. Next we'll add some Noise set at 10%, just to add a little grain and tie the whole image together. Finally, we'll add another solid black layer, and apply a Light Leak (the one titled Pavo). With the layer set to Color Burn and 20% opacity, it adds a bit of richness and texture to the image. If you choose to apply the effect as a separate layer you can easily tweak and change it to your heart's content.



### 6 Adding shapes and text

Finally, let's add some text and a graphic. Pixelmator has a selection of shapes and text, added via the + icon (top-right). You drag the item into position and then scale it with the handles; text is edited by tapping on the text box. You can make further refinements by selecting the item in the layer palette, and tapping Styles. This shows a menu with options for colour, outlines, drop shadows, and so on. Your finished image can be shared via Messages, Mail and iCloud Photo Sharing; opened in another app, saved to iCloud Drive or Photos.



# Apple TALK

Have your say on  
everything Mac,  
OS X and iOS



## Welcome...

There's always plenty to say about Apple, whether it's good or bad. And we'd particularly love to hear what you think? Write to us at [letters@macformat.com](mailto:letters@macformat.com) and the remember, the Star Letter wins a prize!

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## STAR LETTER



### Mailed it!

I read your Best Mail Alternatives (MF291) with interest, as I have never been a fan of Apple Mail and was delighted to see you recommend Postbox. I am a Postbox user, but you don't mention in your article its ability to display and compose messages in one font size, yet send them in another.

My eyesight isn't brilliant, but Mail is the only app where I struggle to read the text on the screen. I know with many email apps you can use the  and the + key to zoom in, but this is rather solution. If I use a larger font size, it means the recipients also receive my emails in that font size, and as someone who is self-employed it worried me that this would not look very professional. I used to compose my messages in font size 16, and when I was ready to send it I would then change it down to 12. But I lost count of the number of times I forgot to do this, hitting send before reformatting. Then one day a client replied saying that although I hadn't

Last issue, Postbox 4 topped our group test of Apple Mail alternatives.



used capitals, my size 16 font size in emails made him think I was shouting!

Postbox resolves this problem. It has two font size settings – one for display purposes (both reading and writing emails) and one for when you actually come to send the email. It's such a simple idea, but one Mail and other apps (including those you also tested in your feature) haven't cottoned onto yet. Although I've sent emails to Apple pointing this out, there seems little sign of them actually taking on board comments from users. Then again, perhaps I should send them an email using a larger font size, so they can actually read what I've written on the screen!

**Simon Whaley**



## YOU'RE A WINNER!

Drop us an email at [letters@macformat.com](mailto:letters@macformat.com). If yours gets picked as the *MacFormat* Star Letter, you win a Just Mobile AluCable Flat for connecting iOS devices with a Lightning port to a Mac.



**Alex Blake says...** A great tip, Simon, and yes it seems to be a feature that's not often explored in email apps.

As you say, Postbox has Display Font and Composition Font choices. The Display Font controls the size on non-HTML formatted messages that you receive as well as those you compose yourself. Composition Font determines how your recipient sees the message, and it's not just font size either. Postbox allows message recipients to see messages with a different font, colour or background too.



## Voicing opinion

For many years I would read the paper MacFormat magazine at the same time as doing various jobs around the house. When I initially swapped to the digital version on my iPad, I found it a bit frustrating since it was difficult to keep stopping to scroll down the page to the next piece of text. Then I realised that I could select all of the text on a page and use the Speak option to allow my iPad to read it to me while I got on with my job. Most of the time it uses the default English male voice, but once in a while the text is read in a completely different voice and language – the article on Music IO in Issue 288 uses a female voice in an unknown language.

Can you please tell me what determines the voice/language that is used since there is nothing on the page to indicate which will be used?

**Geoff Hawke**



**Alan Stonebridge says...**

The voice that's used is picked in Settings > General > Accessibility > Speech > Voices, but you can pick just one at a time. I'm unsure why your iPad is not sticking to that; check there's a tick next to the one you want to hear. Sadly, you can't use this with MacFormat any more; our new production software doesn't render text as HTML. The upside is the digital edition's design will improve in the coming months.

## Out in the Snow

I am guilty of hanging on to my early 2008 white MacBook (which I love). It's had quite a few repairs and I've increased the memory so it's been running very well on Snow Leopard for ages. I also have an iPhone 5s; my husband has an iPad and we have an Apple TV.

My printer broke yesterday and, after doing extensive research, I decided on the one I want to get as a replacement. Then I suddenly realised that it won't run on 10.6.8. I've put up with being unable to use iCloud and having erratic syncing with the iPhone as I wanted to stay in my safe zone – but is it past time to buy a new MacBook or a MacBook Air? And, if so, how will I cope with the many changes in the OS? Or maybe I should just look around for any printer which will run Snow Leopard?

What shall I do?

**Joan Fletcher**



**Christian Hall says...** Printers are particularly guilty of not lasting too well on the software side, drivers are often left languishing as new models come to market so quickly.

This is likely to be less of an issue in more recent versions of OS X – many printers out now will go back to 10.8 or even 10.7, but it's not uncommon for 10.6 to be beyond them now. As you've invested a lot in your MacBook we understand your wanting to keep hold of it, and you shouldn't feel pressured to move on. But, hardware incompatibility with 10.6 is likely to hold you back. We did find that the late 2014 Canon Pixma MG5650 works with 10.6.8 though, and that can be found for around £50.

## Alfred the Great?

As a new subscriber to MacFormat's print edition, which I'm enjoying hugely, I think your Spotlight article (*MF291*) was very apposite. I have recently installed Alfred ([alfredapp.com](http://alfredapp.com)), a productivity app for OS X, on my MacBook Pro. Yes, it does Spotlight, only much better, and a whole load of other stuff besides. It all becomes second nature as it quickly attunes itself to one's Mac usage (file-searching, app-launching, etc) from a few keyboard strokes. The dock has gone into hiding and the trackpad... now, where is that?

You will be aware of Alfred's existence, but for the benefit of any readers who are not, I would strongly recommend they check it out! The app will speed up their days and greatly increase the fun quotient of their Macs. The latest version (2.7.2) is free



Spotlight's improved in El Capitan, but Alfred has useful workflow tricks.

at the Alfred website ([alfredapp.com](http://alfredapp.com)). For advanced stuff, you need the Powerpack and Remote for iOS. The Mac App Store's version is, sadly, 1.2 – from 2012. Any chance of MacFormat inviting Alfred to improve on that soon? Who knows, it might just reveal a few surprises under that bowler hat?

**John Brown**



**Alan Stonebridge says...**

We certainly recommend readers check out Alfred if they find Spotlight's capabilities insufficient because, as you point out, the app is free. Regarding the Mac App Store version, the developer provides an explanation at (<http://bit.ly/1F3E8eB>); basically, it's due to security restrictions on apps sold in Apple's store.

## iPad Post-its?

I love the magazine and especially the iPad version, subscribing for three years now. The only frustrating thing is remembering articles and being able to find them again quickly amongst the plethora of issues. So my suggestion would be to include some way of being able to bookmark or tag a certain article for future reference – almost like a pin or a Post-it note.

**Greg Whiteley**



**Paul Blachford says...** We like this idea, Greg, but at present that's not possible. Features are constantly

being added to our software though so we may one day be able to incorporate that.

Don't forget that you can use the Page Finder in each issue (tap the arrow at the bottom, then the top-right icon), or search back issues from the app's Library tab.

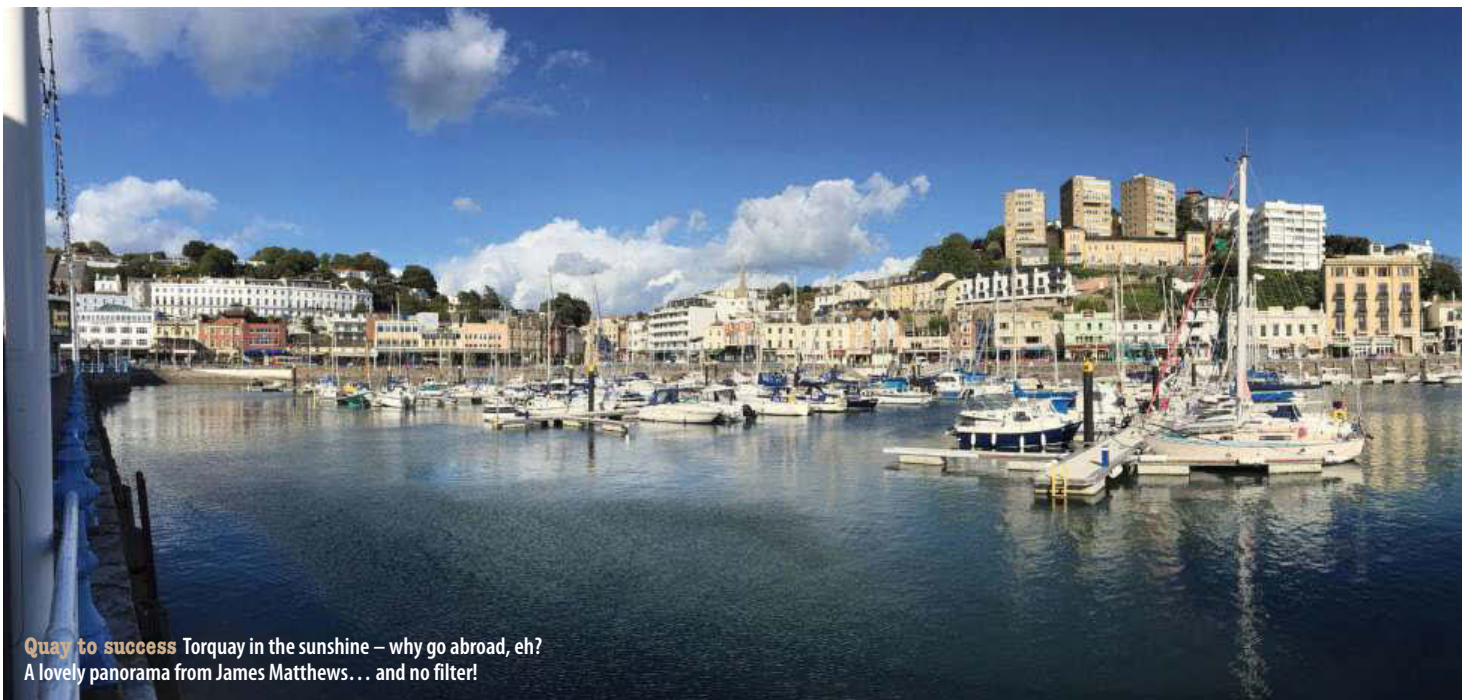
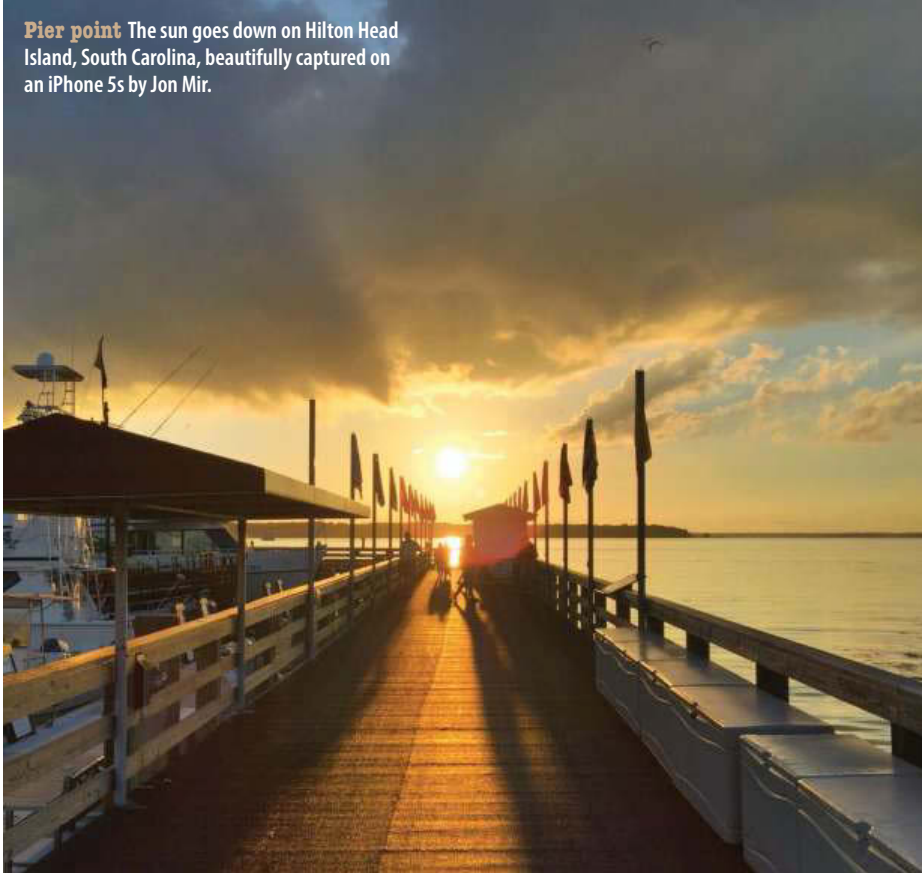
Would you like to see something like virtual bookmarking in our iPad edition?





## **PhotoSTREAM** Send the best of your iPhone shots to [photos@macformat.com](mailto:photos@macformat.com)

**Pier point** The sun goes down on Hilton Head Island, South Carolina, beautifully captured on an iPhone 5s by Jon Mir.



**Quay to success** Torquay in the sunshine – why go abroad, eh? A lovely panorama from James Matthews... and no filter!

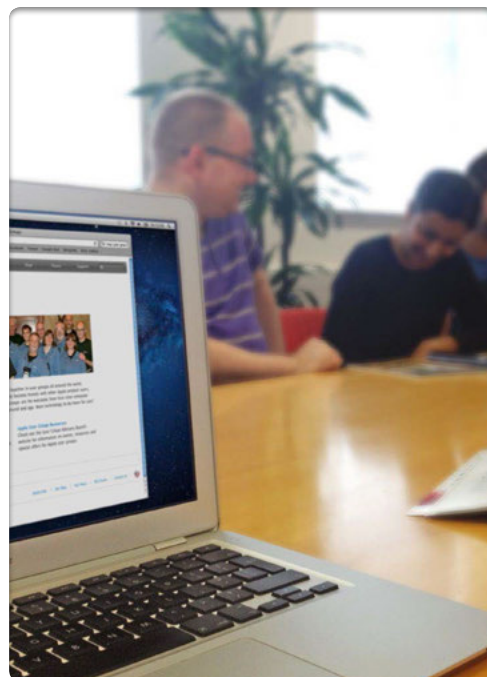


**La tormenta** Dan Oakes took this moody Spanish storm shot at a resort in Murcia. He used the Drama and HDR Scape filters in Snapseed.



## User Groups

Find fellow Mac enthusiasts near you!



Search the list below to find your local Mac user group – and if you can't find one, why not start one yourself? It's easy and fun.

### Berkshire MUG

[vlsburia@me.com](mailto:vlsburia@me.com)

### Bracknell Forest MUG, Bracknell, Berks

[bfmugoffice@gmail.com](mailto:bfmugoffice@gmail.com)  
[bfmug.org](http://bfmug.org)

### Bristol and Bath MUG

[robert@bbmug.co.uk](mailto:robert@bbmug.co.uk)  
[bbmug.co.uk](http://bbmug.co.uk)

### ClubMac Ireland, Dublin

[secretary@dubmac.ie](mailto:secretary@dubmac.ie)  
[dubmac.ie](http://dubmac.ie)

### Cork University College, Cork

[d.murphy@cs.ucc.ie](mailto:d.murphy@cs.ucc.ie)  
[ucc.ie/mug](http://ucc.ie/mug)

### Cotswold MUG

[paul@cotsmug.org](mailto:paul@cotsmug.org)  
[cotsmug.org](http://cotsmug.org)

### Cumbria Mac Enthusiasts, Barrow-in-Furness

[contact@macenthusiasts.co.uk](mailto:contact@macenthusiasts.co.uk)  
[macenthusiasts.co.uk](http://macenthusiasts.co.uk)

### Edinburgh MUG, Edinburgh

Twitter: @edmug  
[edmug.org.uk](http://edmug.org.uk)

### Exeter MUG, Exeter

[examug@mac.com](mailto:examug@mac.com)  
[examug.org.uk](http://examug.org.uk)  
Twitter: @examug

### London MUG, London

[secretary@lmug.org](mailto:secretary@lmug.org)  
[lmug.org.uk](http://lmug.org.uk), [@londonmacgroup](https://twitter.com/londonmacgroup)  
Facebook: [facebook.com/groups/35108081221](https://facebook.com/groups/35108081221)

### Midlands MUG, Birmingham

[mmug.org.uk](http://mmug.org.uk)

### OxMUG, Oxford

[oxmug.org](http://oxmug.org)

### South Essex MUG, Wickford, Essex

[seal-apple.co.uk](http://seal-apple.co.uk)

### South Wales MUG

[terence.neels@btinternet.com](mailto:terence.neels@btinternet.com)

### Suffolk Mac User Group, Ipswich

[mikekwasniak@me.com](mailto:mikekwasniak@me.com)  
[suffolkmacusergroup.co.uk](http://suffolkmacusergroup.co.uk)

### Sussex MUG

[adamfield@gmail.com](mailto:adamfield@gmail.com)  
[sussexmug.org.uk](http://sussexmug.org.uk)

### Three Counties MUG Luton, Bedfordshire

[chris@3cmug.org.uk](mailto:chris@3cmug.org.uk)  
[3cmug.co.uk](http://3cmug.co.uk)

### Wessex MUGs Fareham, Dorchester, Bournemouth & Salisbury

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## GET IN TOUCH

If you have a technical issue that you need help with, please email us at: [sos@macformat.com](mailto:sos@macformat.com)

## MacSOS

*Your questions answered by our Apple expert in residence, Luis Villazon*



Is this bargain too good to be true?

**Q** My high street computer shop has a Late 2012 MacBook Pro in the window with a Core i5 CPU and 16GB RAM for £399. This looks like a good deal to me, based on scanning eBay for similar systems, but I need to know one thing. Will I be able to connect this laptop to an external monitor? I'm planning to buy it as a sort of emergency backup, in case my current Mac mini dies suddenly, but I'd need to be able to plug it into my BenQ monitor for this to work. Do you have any thoughts on this?

**Mike Alford**

**A** The first thing that jumps out is that this probably isn't a Late 2012 Retina MacBook Pro. On that (13-inch) model, the RAM is soldered onto the motherboard so it isn't upgradable, and it was available only with 8GB. The Late 2013 model was the first 13-inch Retina MacBook Pro available with 16GB.

You can confirm the Mac's model and date in the shop by clicking the Apple icon in the menu bar and selecting About this Mac, but I think it's more likely it is a Mid 2012 non-Retina model. £400 is still a decent price for this, and the graphics card in it can drive an external display at up to 2560x1600 pixels. You will need a Mini DisplayPort to DVI or HDMI adaptor to connect it to your BenQ monitor, but these are less than £10 on Amazon (or £25 if you want the official Apple adaptor).

**A second-hand MacBook Pro is a decent alternative to a new Mac mini.**



## My Time Capsule uses its own network

**Q** When I installed my Time Capsule and set up Time Machine, I was never asked which network to use – the system just set up a new network, 'Oystein Wi-Fi Network', which is used exclusively for Time Machine backups. The trouble is this network is not connected to the internet, or any of my other 5 PCs or Macs. This task is taken care of by 'OP-net', a home and WAN network.

As it is today, I have to change to Oystein Wi-Fi Network when I want backups. However, most of the time I naturally want to stay on the OP-net network, which I use for everything else.

I thought it would be easy or at least possible to set up the Time Machine to use the network of my choice, but I've not been able to figure out how or if this can be done.

**Øystein Pettersen**

**A** It can be done, and it's quite straightforward. Connect to the Oystein Wi-Fi and open Airport Utility. You'll see your Time Capsule there; click on it and click Edit on the pop-up. On the Network tab, make sure that 'Router Mode' is set to 'Off (Bridge Mode)'.

Now, on the Wireless tab, your Time Capsule is currently set to 'Create a wireless network', but the setting you actually want is 'Extend a wireless network'. When you switch



**Time Capsule can create its own Wi-Fi network or extend an existing one.**

it to this, you'll see a drop-down list where you can select your main network – the one that is able to reach to the internet.

This will put the Time Capsule on the same Wi-Fi connection as everything else, but it still means that your backups might end up travelling through Wi-Fi twice – once from your Mac to the router and then again from the router to the Time Capsule. That's a waste of bandwidth, so if space and electrical sockets permit, it's a better idea to put the Time Capsule next to the router, connect them with an Ethernet cable, and set the Time Capsule's network mode to 'Off'.

Unless you actually need to extend the range of the Wi-Fi network in your house, it is better not to have two access points broadcasting Wi-Fi signals.



## Care and feeding of batteries

**Q** I hear a lot of conflicting advice about laptop batteries. Some say I should keep it topped up at 100% and then let it drain all the way down once a month. Others say that charging it once a day is better. Who is right? I use my MacBook Pro as my main computer and it is normally plugged into the mains on my desk. But I want to have the option of running from battery occasionally, such as on holiday.

**George Peake**

**A** Lithium-ion batteries don't like extremes. They don't like getting very cold or very hot, or spending too much time in a completely flat or completely charged state. Indeed, Apple's advice at [apple.com/batteries](http://apple.com/batteries) used to say of its lithium-ion polymer batteries: "If you don't use your device often, be sure to complete a charge cycle at least once a month". That exact text no longer features on the site, but Apple still recommends charging your MacBook to 50% if it's going to be stored long-term.

It's worth reading Apple's online advice about charging and storing the batteries used in its devices.

## Finally - an end to panic attacks

**Q** I was having up to six kernel panics per day, and a day without one was a rarity. I was becoming very angry with Apple because OS X is supposed to allow a product to crash without bringing down the whole system, but kernel panics do just that - white screen, and goodbye! I had always taken a screen snapshot of the diagnostics and sent them to Apple, just in case, but the mass of hexadecimal strings and register names was meaningless to me. Finally, after enduring three months of this aggravation, I looked through the reams of diagnostic records to see if there was something an amateur such as myself could understand, and I found this: "BSD process name corresponding to current thread: <name>".

I soon discovered that 'name' was always the same and that it belongs to a product that I had paid for: a virus-checking and general 'security' system to keep my Mac in top condition! I used AppZapper to remove the entire product from my system. That was in April, this year, and I have not had a kernel panic since. Worse than a virus possibly?

**Sid Green**

**A** Definitely. Especially when you consider that there still aren't any actual viruses for OS X out 'in the wild'. Certainly you will occasionally read about a theoretical vulnerability or a proof-of-concept virus created by researchers. But an actual virus that you or I are ever likely to catch? There are none. I have several Macs and do quite a lot of medium-risk things with them as part of my work. Things like installing third-party utilities

from places other than the Mac App Store, for example. But I don't buy drugs or weapons on the dark web and I don't download pirate movies on BitTorrent.

I've never installed a virus scanner on any of my Macs and I've never had a virus, trojan or worm. Neither has almost anyone else, of course, but many will nevertheless

install anti-virus software on their Macs just to be on the safe side. Except that you're not playing it safe if the anti-virus software

itself is a leading cause of system instability.

At best it will protect you from a non-existent threat. At worst, it causes kernel panics. It's a very unpopular opinion and I catch a lot of heat for it, but I believe that anti-virus software does more harm than good *even on Windows PCs*. On the Mac, using it basically amounts to superstition.



The first virus ever seen in the wild infected the Apple II. But it can't affect modern Macs running OS X.

## Is my laptop secretly watching me?

**Q** This is not an SOS but possibly a hidden feature observation I've made. Please correct me if I'm wrong because a brief search on the web suggests I'm the only one to have noticed this. After putting my iMac into sleep mode and I return to my home office after a long period, I'm convinced that my iMac's camera detects my movement and wakes it up, anticipating

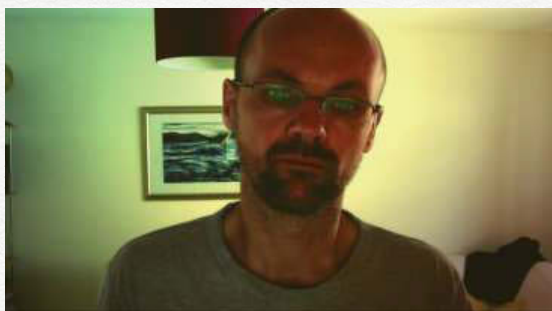
that I'm about to log in. It doesn't turn on the screen but gets the login screen ready for when I hit a key or click the mouse. I'm only suspecting this because I have external drives that start spinning when I enter the room. I'm not quite sure if my iMac hard drive starts too due to the noise from

them but I think it must do. I've always thought 'how clever' though sometimes I do think it's a bit 'Big Brother' spooky!

**Moelwyn Hopkins**

The iSight camera can't be turned on secretly because the green LED will always light up to warn you that it's active.

**A** This does happen, but it isn't using the camera. The camera is connected to the green LED through a hardware interlock, so it can't be active without also turning on the LED. Instead, OS X uses the ambient light sensor to detect movement in front of the screen. This should only stop the Mac from going to sleep; it won't make it 'get ready' if it's already asleep. But external drives might be triggered to wake up that way.





## Shut down more quickly

**Q** Is there a quicker way to shut down my Mac? When I select Shut Down from the Apple menu it takes almost a minute, and frequently fails altogether because iTunes decides to restart itself. I've read that the Terminal command `shutdown -h` now will shut down instantly. But is that safe?  
**Alex M**

**A** Not really. Shutting down from Terminal requires all apps to immediately save their cached data and they only have a second or two to do this before the rug is pulled from under their feet anyway. If you have unsaved documents open, you might not even see the prompt to save. Shutting down from the menu is slower, precisely because it waits to make sure that each app has had time to make an orderly shutdown. Also, the Terminal command can actually be less convenient, because it must be run as root. Which means you'd need to prefix it with

`sudo` and enter your password. If you don't care about open apps and files, it's quicker to use the shortcut `⌘+⌥+⌘+⌵`. Alternatively, you could use the shortcut for the ordinary shutdown dialog, which is `⌘+⌵`. Ultimately though, if your Mac takes too long to shut down, why not just sleep it? Modern Macs use next to no electricity in sleep mode and restart almost instantly. Hold `⌥+⌘` and press the power button. Press any key to resume from sleep.



If you find keyboard shortcuts difficult to remember, you can use Energy Saver's options to ensure your Mac goes to sleep.

## Tech Talk

by Luis Villazon



➤ Last month I included a tip for looking up the definition of the word under your mouse pointer by pressing `⌘+⌘+D`. There are some caveats for this: it only works in certain apps (specifically those written using the Cocoa framework, which includes most of the standard OS X apps and some third-party ones) and the shortcut must be enabled in Keyboard preferences under Shortcut > Services. That's enough to make it work on my MacBook Air, but not on my Mac mini.

Both Macs are running Yosemite, and I tried all the obvious things, like

*After I had disentangled all the binary values stored there, I discovered something very odd*

## Changing track numbering in iTunes

**Q** After starting the Apple Music trial, a lot of my iTunes library has been messed up. I have managed to get most of the album art back but I have a lot of compilation albums that I have renumbered to change the track order. I can change this back by manually editing each track number but it will take a long time to do. Is there a way to automate this, so I can just select an arbitrary number of tracks on the album and have them numbered from one to whatever?

**Keith Darrow**

**A** If you want to create a new track order from an existing album, I think a playlist is a better solution, since it doesn't interfere with the



existing metadata of your tracks and therefore doesn't risk getting overwritten the next time iTunes decides the version in the cloud is canonical.

However, if you insist on arranging tracks by modifying metadata, you can use AppleScript to achieve this.

In Automator, create a Service and add the Run AppleScript action to it and enter a script like this example:

```
tell application "iTunes"
    set mytracks to selection
    set n to 1
    repeat with thistrack in mytracks
        set track number of thistrack to n
        set n to n + 1
    end repeat
end tell
```

deleting `com.apple.symbolichotkeys.plist` but that didn't make any difference. So I poked through the property list file using PlistEdit Pro ([fatcatsoftware.com](http://fatcatsoftware.com)). After I had disentangled all the binary values stored there, I discovered something very odd. While the shortcut was listed as `⌘+⌘+D` in Keyboard preferences, the plist values were set to E, not D. Even weirder, `⌘+⌘+E` didn't work either. After a bit more poking, I found some more shortcuts that don't work either, like `⌘+⌘+P` to turn on Private Browsing in Safari.

Using PlistEdit Pro, I was able to hack the dictionary shortcut back to `⌘+⌘+D` and after a quick reboot it worked again. But how was it disabled in the first place? I don't know yet, but my curiosity is definitely piqued...

Luis Villazon has just checked, and 'gullible' definitely is still in the dictionary.



## My keyboard is not a morning person

**Q** I have a MacBook Pro, which has served me well for several years. It originally ran Lion and has been updated to Mountain Lion, but I have resisted going further in case I overstretch the MacBook's capabilities.

One thing I have noticed though is that the built-in keyboard and trackpad often don't work when I start up in the morning or resume from sleep.

I have searched online and done all the recommended actions, including resetting the PRAM and SMC, and restoring Lion. Would upgrading the system to Mavericks or Yosemite help?

**Olivier Parmentier**

**A** This sounds more like a hardware than a software problem to me. The 2008 MacBook Pro, for example, has a ribbon cable for the keyboard and trackpad that runs underneath the battery. This can come slightly loose over time and cause an intermittent connection. Initially this can look like a software error because slight thermal expansion can cause the connection to only break when the Mac is warm – or, alternatively, only when it has been shut down for a while and is cold.

Try removing the battery and gently prodding the ribbon cable with your finger. If the keyboard starts (or stops) working as you do this, then you're on to something. I have found that sometimes just taping a small square of tissue paper, to apply

a little extra pressure on the cable while the battery is installed, can be enough to buy you a bit more life from your MacBook.



## Mysterious ghost typing

**Q** Whenever I type the word 'test', it gets instantly and automatically replaced with 'echo "test"'. I think this was something I did myself a while ago (I've been learning to program in Python) but I can't remember what it was and I can't find how to remove it.

**Dan Strickland**

**A** It sounds like you have added an autocorrect substitution. You can delete this in the Text tab of the Keyboard preferences pane. You can also see the same autocorrect entries via Terminal using `defaults read -g NSUserDictionaryReplacementItems`. (Before Mavericks, the preference file was `NSUserReplacementItems`.) So it's possible your programming experiments added a new entry using the 'defaults write' command. Text substitutions only take effect in places where ordinary text is expected though, like in Notes or TextEdit. They won't work their magic in Safari's address field, for example.



## Pushing past 3TB of disk space

**Q** I have a Mac Pro connected to a drive enclosure containing two 3TB disks. The disks were originally set to a RAID 1 configuration using Disk Utility, so that each one backs up the other automatically. I am now fast approaching the point where my storage needs exceed the 3TB. The enclosure has room for another two disks and I'm thinking about moving up to a RAID 5 configuration. But Disk Utility doesn't seem to support this. Is there a third-party utility that will do this for me?

**Gareth Woodward**

**A** Yes. SoftRAID (£126, [softraid.com](http://softraid.com)) will do this but I'm not sure it's really what you want. RAID 5 distributes your data evenly across all the disks in the array, with some extra parity data included so that the array can continue to function if any single drive fails. If you added another two 3TB drives, the parity information would take up the equivalent of one disk's worth, leaving you with 9TB of storage – which seems like a good deal, but RAID 5 isn't a backup. No flavour of RAID protects your data. What they do is protect access to your data. If a drive fails, you can still get at all your data with no

interruption. But until you have replaced that drive and waited the day or two for the parity information to be rebuilt, your drives are effectively in a RAID 0 array. Suffer a second drive failure in this period and you'd lose *all* your data, because every file is distributed across the three remaining disks. With one of those missing, you have just two-thirds of every file. Which is the same as no file at all.

A safer option is to set up two of the disks as a single 6TB volume (a 'concatenated disk set' in Disk Utility) to store files. Set up the remaining disks in the same way, and use a utility such as Carbon Copy Cloner (£27.50, [bombich.com](http://bombich.com)) to periodically back up the first volume to the second one. This gives you an actual backup that will protect your 6TB of data against the loss of up to two disks in the same set, though still not against one disk in each array.



Disk Utility can combine multiple disks together so they look like a single volume.



## Is my SD card broken?

**Q** I have a Late 2012 Mac mini running Yosemite 10.10.4. My digital camera takes 4GB micro-SD cards and I import my pictures into the Photos app using an adaptor card to convert from micro-SD to the normal size. I would like to share some pictures by copying them back onto the card, but whenever I try this using Export in the Photos app, it warns 'Export Complete with Errors' and 'Could not write file to destination (1,016)'. I've been advised to reset the PRAM but this doesn't seem to have helped.

**Judith Harvey**

**A** That error is because the SD card is read-only and I think this is much more likely to be a hardware problem. Does your SD card adaptor have a little slide on one edge (usually labelled 'lock')? If so, and even if it is currently not in the lock position, this may be the cause. SD adaptors are very flimsy things – little more than some thin gold-



**SD cards use an old-fashioned physical switch to prevent their contents being overwritten.**

plated contacts sandwiched in a plastic envelope. The write-protect lock doesn't change the electrical connections on the card itself in any way. It's just a little bit of plastic that slides back and forth. The card reader in your Mac detects this with a spring-loaded contact that fits into the tiny slot. Sometimes this gets stuck and the Mac thinks the card is locked. Blowing a can of compressed air into the slot might free it, otherwise you'll need to open up the mini and gently prise the contact free.

## There's no administrator account on my Mac!

**Q** I've bought a second-hand iMac through a friend of a friend. Naturally, the Mac came completely reset (it is running Mavericks) but the only user account on there seems to be an ordinary account, not one with administrator access. How can I add an admin account without having admin privileges? Will I have to reinstall everything from scratch? I don't have the OS X discs!

**Jeremy Linton**

**A** There aren't any OS X discs anymore. If you need to reinstall, you'll do it using the recovery partition and the App Store. But you don't need either to fix this. Restart your iMac with **⌘+⌘** held down. This puts the Mac into 'single-user mode' which gives you full access to the filing system. Now mount the drive by typing `/sbin/mount -uw /`

at the command prompt. Next you need to trick OS X into showing you the Setup Assistant again, which you do by making it think that the OS hasn't completed its original install. The command `sudo rm /var/db/.AppleSetupDone` deletes the file that OS X uses as a marker for this. When you restart your Mac, you'll arrive at the welcome screen that you normally only see on a new Mac or a fresh install. This enables you to create a new admin user account (you must make sure it is a new user account name, not one that already exists). You can use this admin account to change or create any others as you wish.



**If you end up without an admin account, the Setup Assistant can be re-run to make a new one.**

## Self Service

improve Yosemite

OS X 10.11 El Capitan will soon be upon us, but there is still some juice to be squeezed out of Yosemite.

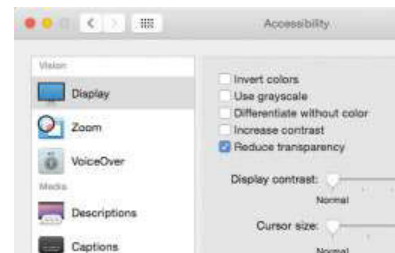
**1** If you dislike translucent menus in Yosemite, they can be disabled by clicking 'Reduce transparency' in the Accessibility preferences pane. Even though it says reduce, this option actually turns it off altogether – and in windows, too.

**2** iTunes 12 mostly got rid of the old sidebar but you can still access a limited version of it by selecting the Playlists view at the top of the window. This is available whether you are browsing music, movies, TV shows, podcasts or audiobooks.

**3** Safari hides the full address of a web page, showing only the domain by default. If you want to be able to see it, you can just click the address field. To make it visible all the time, tick 'Show full website address' in Safari > Preferences > Advanced.

**4** Restrict the kinds of information that Spotlight finds by going to System Preferences > Spotlight > Search Results. Just untick any category you don't need, or drag more important ones up the list.

**5** Dashboard is much more convenient if you configure it to display on top of your Desktop, rather than as a separate space. Go to System Preferences > Mission Control and set the Dashboard pop-up menu to 'As Overlay'.



**Get the solid grey Dock background back by turning off OS X's transparency effects.**



**GET IN TOUCH**

If you have a technical query with your iOS device that you need answering, please email us at [sos@macformat.com](mailto:sos@macformat.com)

# iOSSOS

*Christian Hall fixes your iPad and iPhone problems*



## Larger print in the magazine

**Q** I've just subscribed to the iOS version of MacFormat. Is it possible to read it in landscape mode on my iPad? Is it possible to enlarge text and graphics using the two-finger 'stretch'?

**Paul Miller**

**A** Currently, neither of those is possible. In order to preserve the layout, the app must restrict things you can do. The software used to make the iPad edition doesn't allow text resizing right now either. However, the team is experimenting with various design options to improve readability in the future. The best you manage at the moment is to turn on Zoom in Settings > General > Accessibility.



## Nothing to worry about

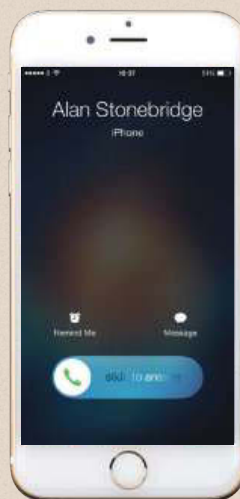
**Q** My father has an iPhone 4 which used to be mine and I gave to him after I upgraded to the iPhone 6. Yesterday I got a text from him saying "Can't talk now – On my way." This was out of the blue and he wasn't on his way to anything. He is already very nervous of online security and has decided that someone else has access to his phone account and may be able to send texts using his credit so he is refusing to top it up. Is that possible? How can I reassure him?

**Jayne Bisley**

**A** Were you by any chance trying to call him at the time? This message is one of the

predefined responses that iOS supplies when you decline an incoming call with a text. If his phone was locked at the time, it would have been even easier to do by accident, because there is no big green Accept button – just the

'slide to answer' and the Message button above it. Particularly for someone unused to touchscreens, or smartphones in general, I can imagine it might be easy for them to accidentally send a text message instead of answering the call. As for reassuring him, it's probably just a question of showing him how this feature works. No one else can use his phone to make calls or send texts remotely, but even if they could, they wouldn't use it to send a pointless template message to you.



**It's hard to 'pocket decline' a call by accident, but sending a text message can still happen pretty easily.**

## Mooching office internet

**Q** I work in a basement where I can't get my iPhone 4 online. The PCs get online using cables but don't have Wi-Fi. Can I use USB to hook my phone up to a PC and share its connection?

**Jean Bardoit**

**A** Not in iOS; your phone won't accept a network connection over USB – this can only be used to charge and sync with local devices.

Getting around this restriction would involve fairly extensive re-engineering of the networking code and jailbreaking your phone, but that's a very complicated setup just to get online. I think a more convenient approach would be to plug a small wireless router into a spare Ethernet socket at work. If you don't have spare socket nearby, you could do this with a Wi-Fi card or dongle for your PC. But you'll probably need you to sweet talk your company's IT department for permission to do either.

## Reinstalling everything

**Q** I have collected dozens of apps – now well over a hundred – on my iPhone over the years. The problem is it takes longer and longer to redownload them all from the App Store every time I need to do a factory reset. I'm at the point where I basically have to leave my phone at home on Wi-Fi for a day to get them all back. Is there a way to make a local copy of them all to save doing this every time?

**Ade**

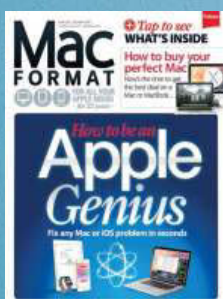
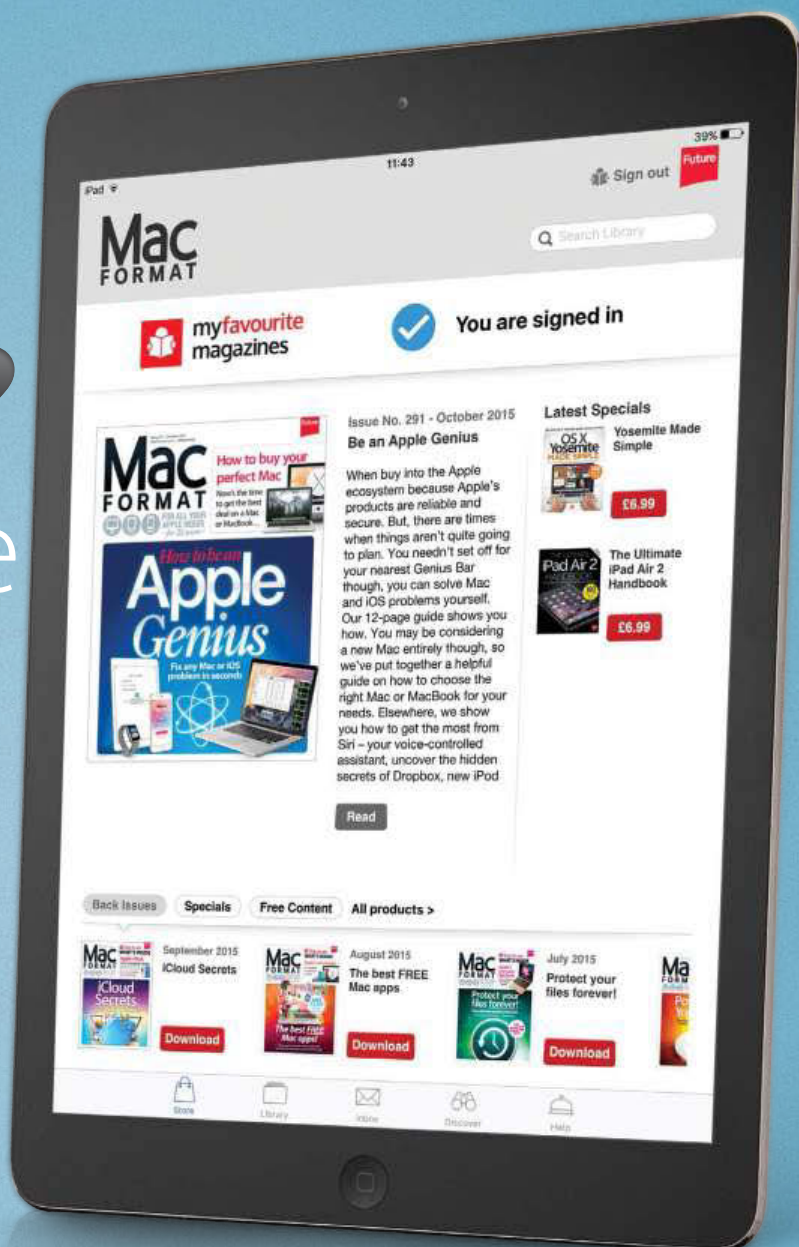
**A** I don't know why you are performing factory resets. This is normally only necessary to recover from a serious lock-up or installation error. Also, it sounds as if you aren't backing up your iPhone to iTunes, which will keep a local copy of every app on your computer so you can restore from there.



# Missed an issue?

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Looking for a back issue? Look no further. Search for 'MacFormat' on the App Store to get our award-winning app for iPad, iPhone and iPod touch! There are lots of issues of *MacFormat* inside it, ready to be downloaded immediately. And remember, from issue 250, *MacFormat* became a fully interactive iPad app!



**Issue 291**  
October 2015

How to be an Apple Genius • Discover the Secrets of Siri • How to buy your perfect Mac • Apple Mail alternatives • Keyboard control tricks



**Issue 290**  
September 2015

iCloud secrets • Get into 3D printing • Complete guide to Apple Music • Get OS X El Capitan features today • Rugged hard drives



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# Get started with Apple Pay

Words: Alex Blake Photography: Future Photo Studio (Joseph Branton)

**As Cupertino joins the world of mobile payments, we show you how to use Apple's secure payment system – and why it's safer and simpler than its rivals**

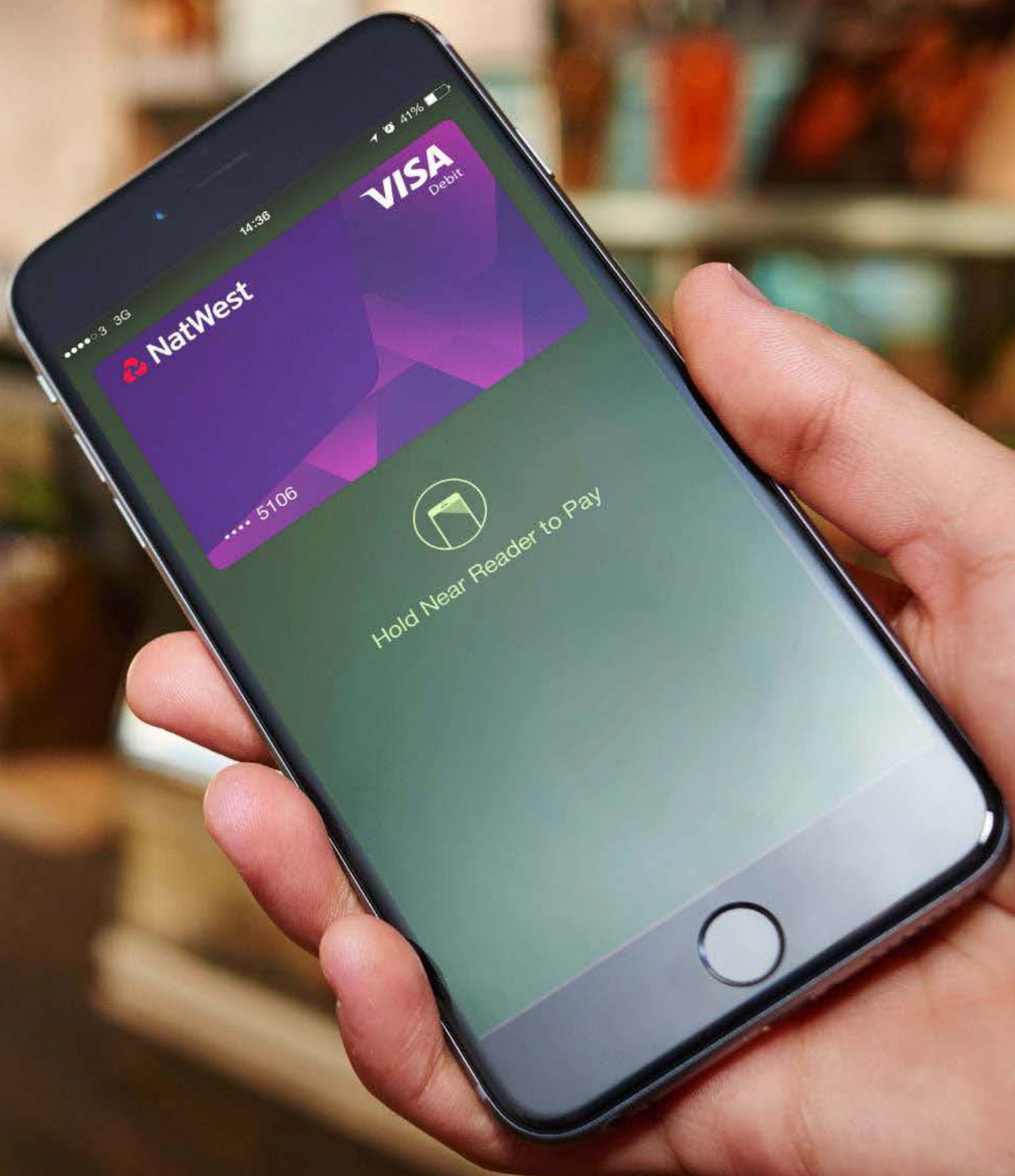


et's face it, 'revolution' is something of an overused word in the world of technology. Yet Apple may be the only tech firm

that can legitimately claim to repeatedly justify its use when talking about its own products. Leaf through computing's recent history and you see the telltale signs of the Apple revolution everywhere you look – iPhones, iMacs and iPads have changed the way we interact with tech forever.

It should come as no surprise, then, that Apple is at it again, this time in the form of Apple Pay, the contactless payment system that wants to keep wallets in pockets and credit cards firmly out of sight.

The beauty of Apple Pay is that it is classically 'Apple'. Simple and elegant, it combines the tech you've already got (an iPhone with Touch ID) with a one-step payment process, all wrapped up in watertight security safer than traditional chip and PIN. All you need to do is place your iPhone near any NFC card terminal and rest your finger on its Touch ID sensor. The foundations are laid – in a few years we could be looking back at the dawning of yet another Apple revolution.



Apple Pay works with any terminal that accepts contactless payments, so you can keep your card in your wallet and pay on the go.





## Apple Pay in the UK

Sadly for UK consumers, many developments in mobile payments have debuted in the USA and are not yet available here. One notable example is PayAnywhere, which plugs into an iOS device and functions as a mobile NFC terminal. This lets any retailer accept Apple Pay transactions, regardless of whether they actually have an NFC terminal.

Likewise the biggest potential competitor to Apple Pay – Google – has yet to launch its own mobile payment system in the UK. Google's first foray into the world of mobile payments was Google Wallet, rolled out in the USA in September 2011. However, the system has been plagued by security issues and lacks the simplicity of Apple Pay.

That puts Apple in a good position. The opinion of Pinar Ozcan, Assistant Professor of Strategic Management at Warwick Business School, is typical of many industry analysts. "So far, Apple Pay is ahead in terms of roll out, partners and safety", she insists, although she does warn that Apple must maintain its momentum.

That healthy start may come under threat, though, when Samsung Pay hits UK shores (its release date here was not confirmed at the time of going to press). Samsung's own offering, while similar to Apple Pay, has the advantage of working with any credit card reader, not just those enabled with NFC. That's because it works through Magnetic Secure Transmission (the magnetic strip reader on terminals) as well as NFC, so users just need to tap their Samsung phone on the side of the card reader for it to work. The number of places you can use Samsung Pay is therefore at present far larger than the number accepting Apple Pay.

But while rivals like Android Pay and CurrentC have yet to make the leap across the pond to the UK, one noteworthy rival on these shores is Zapp. This payment app integrates with five major banks in the UK (First Direct, Metro Bank, HSBC, Nationwide and Santander); when a user pays with Zapp, their banking app is opened on their phone. A secure token is created during each payment and the user taps a button in their bank's app to pay. The secure token makes the transaction very secure (just like Apple Pay), and the retailer never sees the user's payment card details. Yet the Zapp way of paying is not as quick and convenient as Apple Pay, which manages to be both speedy and secure.

So while Apple Pay seems to be ahead, victory is by no means assured. A major stumbling block is the way Apple Pay is tied to hardware – you need an iPhone 6 or 6s to use it. In the opinion of Adam Davis, a consultant at financial industry analysts Capco, that could be a problem.

"At the moment the iPhone leads the mobile market with over 40% share", he says. "And while that is an

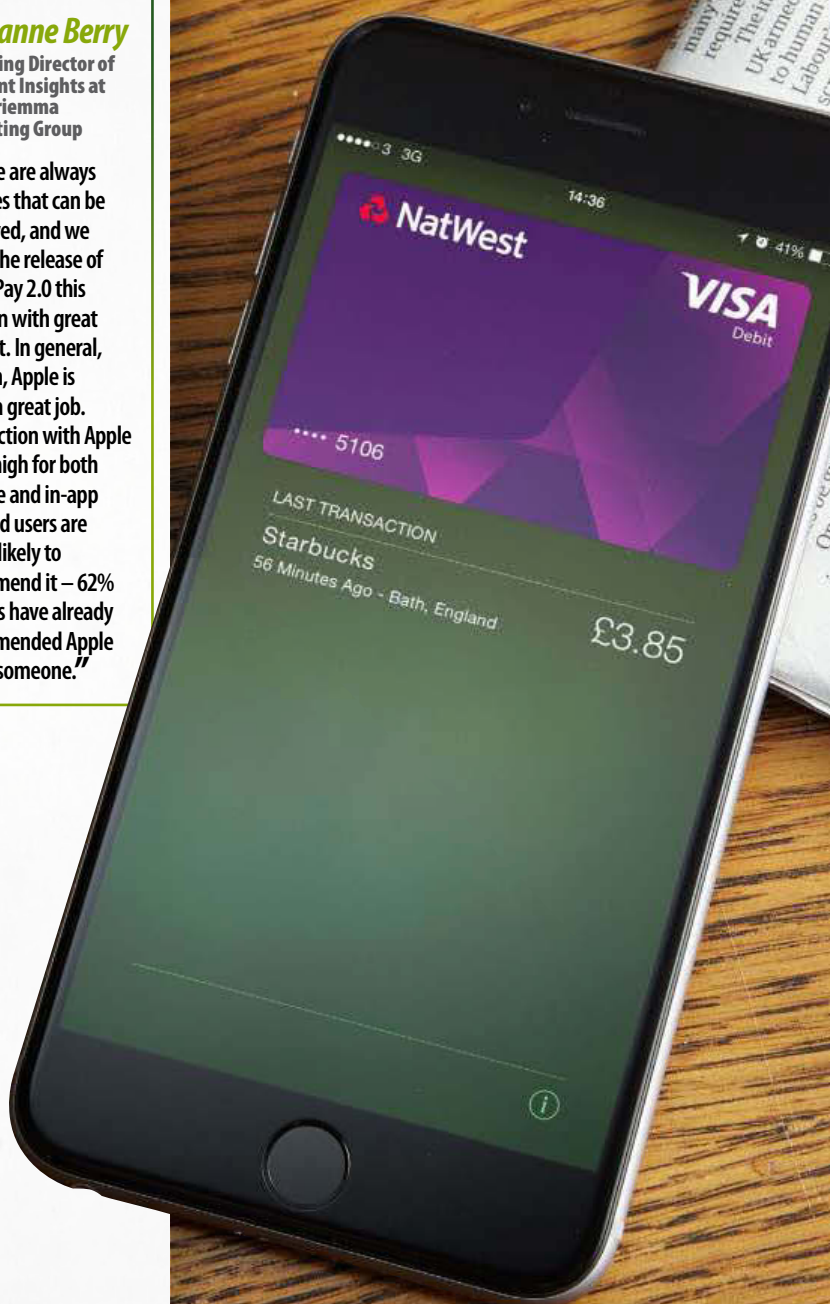
### Ask the experts: *What could Apple Pay do better?*



**Marianne Berry**  
Managing Director of  
Payment Insights at  
the Auriemma  
Consulting Group

"There are always features that can be improved, and we await the release of Apple Pay 2.0 this autumn with great interest. In general, though, Apple is doing a great job. Satisfaction with Apple Pay is high for both in-store and in-app use, and users are highly likely to recommend it – 62% of users have already recommended Apple Pay to someone."

From start to finish, the Apple Pay process is safe and secure. Protected by a one-time token system, it ensures that even if hackers find your unique payment code, they still can't use it to steal your money.



*"So far, Apple Pay is ahead [of its rivals] in terms of roll out, partners and safety."*



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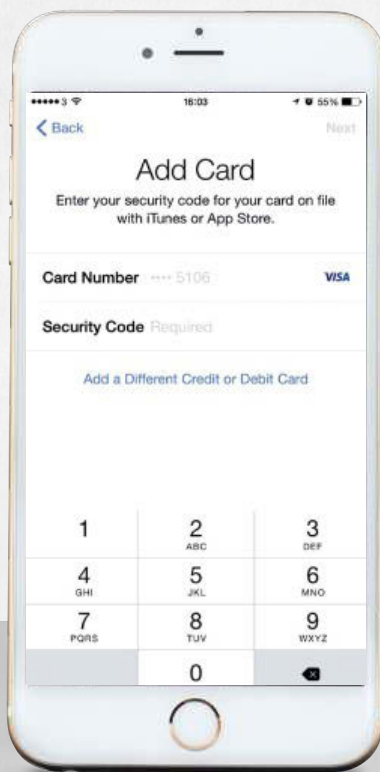
# Using Apple Pay

As with all Apple products, Apple Pay is designed to be both simple and secure, and it is compatible with any NFC-enabled terminal. Here's how it works...

## Wallet setup

**1** Open Wallet (formerly Passbook), tap Add Credit or Debit Card and enter your card details. Tap Next, after which your card will be verified by your bank – once that's done, tap Next. You can now use Apple Pay.

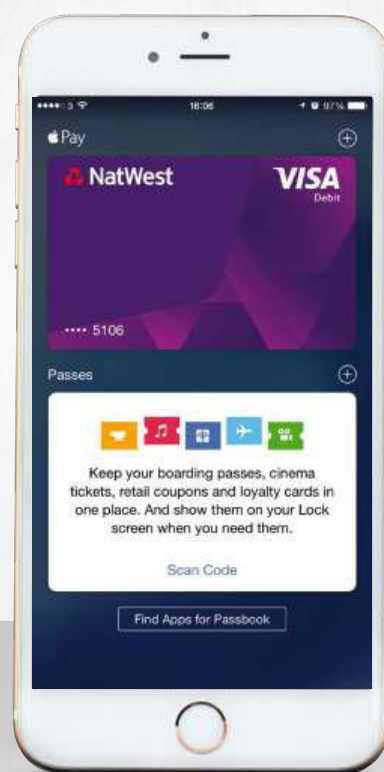
You can also register through your bank's own app. The process is largely similar to Passbook's – see your bank's website for more details.



## Using Apple Pay

**2** Hold your iPhone near the contactless card reader and an image of your card will appear on the screen. Then, just rest your finger on the Touch ID sensor (but don't press the Home button), wait for a second for it to confirm your fingerprint, and voila! It's as easy as that.

To use a different card, tap the one on screen and choose another. (In iOS 9, prep a card at the Lock screen by double-clicking the Home button.)



➔ advantage, it means that a huge number of potential customers aren't using Apple devices – and so can't use Apple Pay... accessibility is still the key barrier and one that Apple will have a challenge to overcome."

Also, whereas Apple's previous successes depended in large part on how willing consumers were to buy its products, it now has to also rely on how willing retailers are to accept Apple Pay – "an extra barrier to success," according to Davis.

## Still, there are many reasons to be positive about Apple Pay

One aspect that has received scant attention is the effect Apple Pay could have on in-app purchases. According to Marianne Berry, Managing Director of Payment Insights at Auriemma Consulting Group, "the impact of Apple Pay on mobile commerce is more significant than in-store if for no other reason than the size of the denominators. Apple Pay accounts for only a tiny fraction of the overall volume of payments at the point of sale, but for many mobile apps it's a substantial share."

Using Apple Pay to make in-app purchases is so useful because it bypasses the need to create an account or enter card details with retailers you may not entirely trust. Instead, payment is quick and secure, just as it would be with in-store Apple Pay transactions.

The impact of Apple Pay can be observed in the behaviour of many consumers. As Berry puts it, "Apple Pay users told us that they go to the App Store and enter

### Ask the experts: *What could Apple Pay do better?*



**Pinar Ozcan**  
Assistant Professor of  
Strategic Management  
at Warwick Business  
School

**"With CurrentC and Android Pay still absent everywhere but the US, Apple has a free playing field. But this will soon change and Apple needs to spread their service as widely as possible before the competition arrives."**

'Apple Pay' in order to find and download apps that accept it. Not having to enter a credit card number, expiration date, and CVV code makes it much easier to do a transaction on a new app."

Until September, Apple Pay transactions were limited to £20, although that has now risen to £30. However, this wasn't a limit imposed by Apple but by NFC terminals themselves; Apple Pay can accept any payment amount, as long as the card terminal in question can too.

The security features at the core of Apple Pay are thought to have convinced some retailers that a payment limit is unnecessary by proving that the payer is present and making the payment. Boots, for example, is thought to be planning to remove the limit in November this year, while Pret A Manger allows limitless payments already.

However, don't get too excited – retailers can only remove payment limits if they upgrade their NFC terminals, so being able to spend more than £30 in one go with Apple Pay depends on how fast retailers are willing to update their hardware.

## Security

All our experts agreed that security is one of Apple Pay's strong points. Davis points out that "the technical architecture has been designed to limit fraud at the point of sale... In fact, this is the first time that this many large banking players have signed up to an external payments platform at this rate, which is a win for the end user."

Ozcan agrees, arguing that "Apple has a reputation for

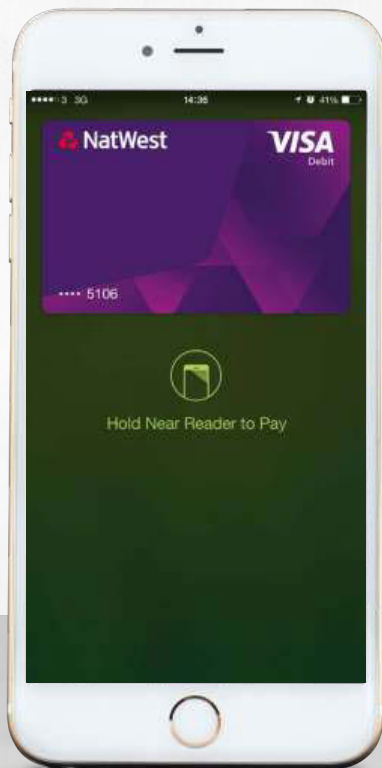


## In-app purchases

**3** Using Apple Pay in an app is just as simple as using it elsewhere.

Simply tap the 'Buy with Apple Pay' button, review your payment details, then place your finger on the Touch ID sensor to finish the transaction.

This is a much more streamlined process than entering your Apple ID details, and the biometric authorisation makes it more secure.



## Pay with Apple Watch

**4** Open the Apple Watch app on your iPhone and tap My Watch.

Next, tap Passbook & Apple Pay, then Add Credit or Debit Card, and then Next. Enter your card's details, then tap Next.

To use Apple Pay with your Watch, double-click the side button, then hold your Watch's face to the card reader until you hear a tone and feel a slight pulse, which confirms the transaction was completed.



building very secure systems" and pointing out that the success of iTunes was built upon this at a time when digital music marketplaces were still rare.

For Berry, the situation is a little more nuanced, and she notes that "security is both a driver and a barrier to usage. It is the second most frequently cited benefit of Apple Pay for users, who consider the tokenisation process to be more secure than standard payment cards, and the second most frequently mentioned barrier to trial among non-users, many of whom feel it's an untested technology". Convincing non-users that Apple Pay is as safe as has been claimed is a key test for Apple, but it is certainly encouraging that so many actual users of the system are so confident of its security credentials.

They have reason to be confident. Card numbers are never stored on a user's device, nor are they stored on Apple's servers or backed up to iCloud. Rather, each device is given a unique Device Account Number, which is encrypted and stored in the iPhone's Secure Element.

Each transaction is similarly protected by being assigned a 'dynamic security code', which is different with every payment. Retailers only see this dynamic code, not your credit card number. It also means that any hacker who gets this ID can't do anything with it, as it can only be used the first time it is generated and doesn't identify you in future transactions.

It's not only the actual security measures Apple puts in place that help its reputation, but also the actions of its rivals. In October 2014, CurrentC had to admit that

### Ask the experts: *What could Apple Pay do better?*



**Adam Davis**

Consultant at Capco

**"Rewarding customers. The issuing of loyalty cards through Apple Pay has been announced, but the roll out and adoption will be slow due to NFC compatibility issues. The quicker Apple can meaningfully reward loyalty, the higher the adoption and better the service."**

hackers made off with the email addresses of some of its users, while Google's harvesting of user data for its own business use is well known. "When it comes to Apple Pay, the fact that Apple does not share user data while Google does is an important point of concern for many potential users", says Ozcan.

Yet despite the apparent market-leading security features enacted in Apple Pay, media outlets have not been shy in reporting 'Apple Pay fraud' stories typeset in gigantic bold italics. Apple's payment system directs applicants to call their bank and go through a number of security steps if their identity cannot be verified. This is susceptible to fraud from clever scammers who may be able to guess the correct security answers.

However, as you may have guessed, this is a weakness of the banks' security, not of Apple Pay, and there have yet to be any breaches of Apple Pay itself or leaks of user data. The measures put in place by Apple are the best in the business because not only are they encrypted and require a biometric input (from Touch ID), but the unique transaction codes are useless if obtained by fraudsters as they are single-use only.

Apple Pay was by no means the first mobile payment system, but Apple has created a fast and trustworthy one that many consider to be the industry leader. As is so often the case, Apple stands as the current pacemaker, leading the way but never looking over its shoulder. The race isn't over yet, but Tim Cook and company have gone a long way to making it secure.

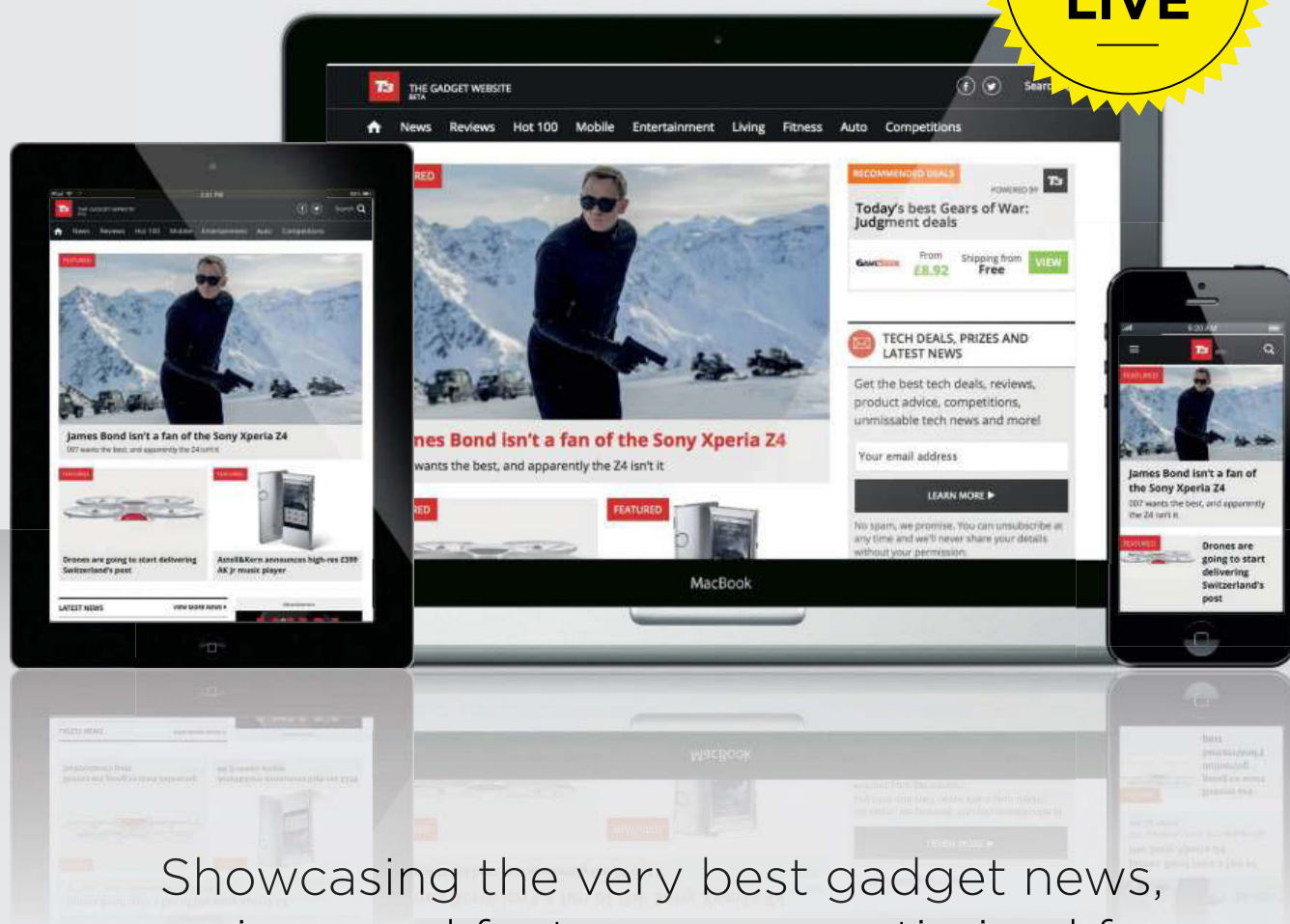




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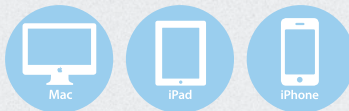


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# RATED



## REVIEW MANIFESTO

Our ratings explained

Our reviews are totally independent; we're not affiliated with Apple or anyone else, nor are we influenced by advertisers. You can trust us.

Prices we quote for products are correct at the time of writing and are the best we can find from a reputable online dealer, excluding delivery.

★★★★★ Rarely given; a brilliant thing that's as good as you can get in its class right now

★★★★☆ A strong recommendation to buy; any concerns are comfortably outweighed by its strengths

★★★☆☆ A good product you should consider buying, but there may be better options for you

★★☆☆☆ Fundamentally flawed either in concept or execution; there are almost certainly better options for you

★☆☆☆☆ A waste of your money and everyone's time; do not buy!



Given solely at the discretion of the Editor only to truly exceptional products.



Our group test winner gets this award; it's the best of its kind at the time of writing.



*"Find the perfect accessory for the perfect accessory – these Apple Watch stands let you charge your device in style"*  
**Apple Watch chargers p96**

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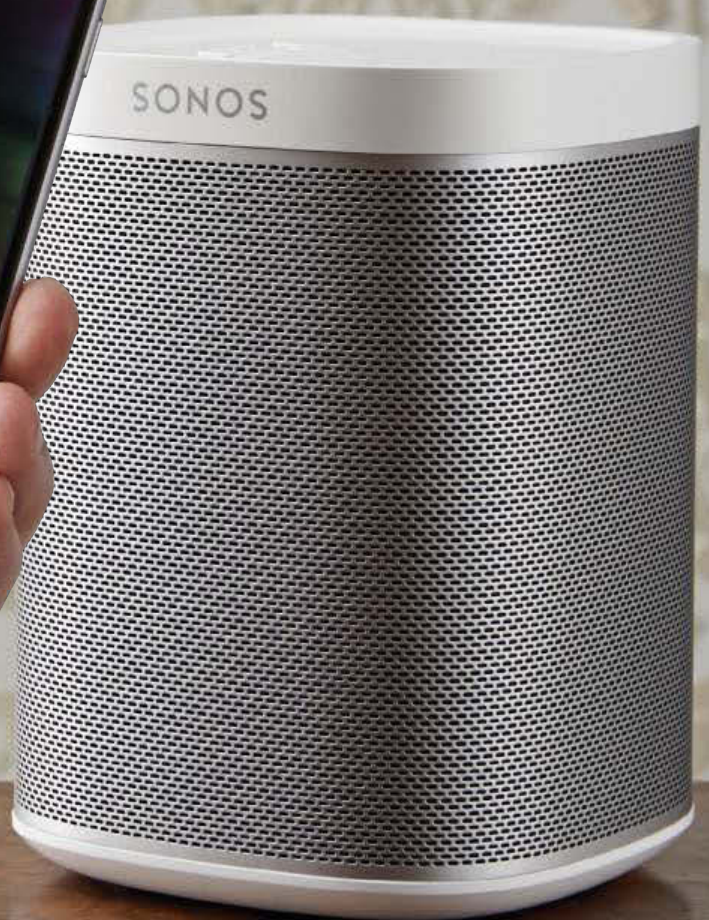
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# Multi-Room Speaker Systems

Fill your home with the sound of music, thanks to these affordable multi-room speaker systems



➤ Multi-room speaker systems have been around for years now, but until relatively recently they were complex, expensive systems aimed at people who could happily afford to kit out an entire mansion.

But, like most technologies, multi-room speaker systems have fallen in price in recent years, to the point where they're not much more expensive than conventional speakers any more. One factor that has helped to drive multi-room speakers into the mainstream is our increasing use of mobile devices, such as smartphones and tablets. Mobile devices mean mobile music, so it makes sense to have a multi-room speaker system that can follow you from room to room at home.

The first generation of wireless speakers used Bluetooth for streaming music, but Bluetooth has a fairly limited

range and isn't very good at penetrating through walls or other obstacles. Because of this, multi-room speaker systems tend to use Wi-Fi to connect to your home network instead. A Wi-Fi network provides better range, and better sound quality too, as it has greater bandwidth than Bluetooth. However, the set-up process can prove to be a little more complicated, and each of the multi-room speaker systems that we review here handles this differently.

*The set-up process can be complicated, and each of these systems handles this differently*

Most of them start with an iOS app that you can run on your iPhone, iPod Touch or iPad (or Android equivalent). These apps will help you to connect your speakers to your home network, but once that's done each speaker system goes off in a different direction.

Some of the speakers here rely entirely on the manufacturer's own iOS app for playing music, which can make it difficult – or sometimes impossible – to play music from other apps or other devices, such as iTunes running on a Mac. Few of them will work with the new Apple Music streaming service either.

So as well as getting a multi-room speaker system that sounds good, it's also important to think about the different devices and services that you may want to use when listening to your music. **Cliff Joseph**

## MULTI-ROOM SPEAKER SYSTEMS | AT A GLANCE



	LG Music Flow H5	Philips Spotify SW750M	Pure Jongo T4X	Samsung Wireless Audio M5	Sonos Play:1
<b>Price (per speaker)</b>	£179	£130	£150	£200	£169
<b>Speaker Output</b>	40W	20W	50W	Unspecified	Unspecified
<b>Dimensions (HxWxD)</b>	207x340x88mm	210x360x135mm	165x305x146mm	113x342x168mm	162x120x120mm
<b>Wireless Connectivity</b>	Bluetooth, dual-band Wi-Fi (802.11n)	Wi-Fi (802.11n)	Bluetooth, Wi-Fi (802.11g)	Bluetooth, dual-band Wi-Fi (802.11n), TVConnect**	Wi-Fi (802.11g)
<b>Other connectors</b>	Ethernet, 3.5mm line-in	N/A	3.5mm line-in, optional Ethernet adaptor (£19.99)	Ethernet	Ethernet
<b>Streaming Services</b>	Spotify, Napster, TuneIn, Deezer, GooglePlay	Spotify Premium (iOS/Android only)	Any*	Spotify, Napster, TuneIn, Deezer, Rdio, 7digital	Spotify, Napster, TuneIn, Deezer, GooglePlay, Amazon Music
<b>iOS App</b>	Yes (required)	Yes (required)	Yes	Yes (required)	Yes
<b>Mac/PC App</b>	PC-only	No	No app - but can stream to Mac/PC via Bluetooth/Wi-Fi	Yes	Yes

\*Requires both Bluetooth and Wi-Fi \*\*For Samsung TVs





**1 LG Music Flow H5**  
£179 lg.com

**2 Philips Spotify SW750M**  
£130 philips.co.uk

## TEST ONE

# FEATURES

Connectivity is key

➤ These multi-room speakers all use Wi-Fi to connect to your home network, but there are other features to think about too.

The LG Music Flow H5 and Samsung M5 are the most expensive speakers here, but they're packed with useful features, including dual-band Wi-Fi for maximum range and reliability, and Ethernet for homes where Wi-Fi doesn't work so well. The Sonos Play:1 has Ethernet too, which may come in handy, as its single-band Wi-Fi may struggle.

Pure's Jongo T4X just has basic Wi-Fi and Bluetooth, but it can use both wireless technologies in tandem in order to stream music from a really wide range of devices

and apps, and it's currently the only multi-room speaker system that will work with the Apple Music service.

In contrast, the Philips Spotify speaker only works with Wi-Fi connections and will only let you play music from the Spotify app on iOS devices. It can't play iTunes music from a Mac and, to add insult to injury, you'll need a paid-for Spotify Premium account too.

## TEST RESULTS

<b>LG Music Flow H5</b>	★★★★★
<b>Philips Spotify SW750M</b>	★★★★★
<b>Pure Jongo T4X</b>	★★★★★
<b>Samsung Wireless Audio M5</b>	★★★★★
<b>Sonos Play:1</b>	★★★★★

## TEST TWO

# SOUND QUALITY

Sounding good in every room

➤ The Philips Spotify speaker is the cheapest on test at just £129.99, but its sound quality isn't at all bad. Higher frequencies are clear and detailed, and the bass is adequate for a speaker of this size. Step up to £150 and you can get the Pure Jongo T4X. This chunky speaker provides powerful 50W output with firm bass, although higher frequencies can be a bit shrill.

The LG H5 struggles a bit with volume as well. It's fine for listening to some music over dinner, but the lightweight plastic casing struggles to contain its 40W output and the sound starts to distort when you really pump up the volume.

Samsung doesn't specify the

output of its M5 speaker, but this large triangular unit pumps out plenty of volume. The bass can be a bit heavy, but Samsung's MultiRoom app includes a graphic equaliser to fine-tune the sound.

The Sonos Play:1 stands out here. Its upright, cylindrical design fills the air all around it with a rich, full sound and surprisingly firm bass for such a compact little speaker.

## TEST RESULTS

<b>LG Music Flow H5</b>	★★★★★
<b>Philips Spotify SW750M</b>	★★★★★
<b>Pure Jongo T4X</b>	★★★★★
<b>Samsung Wireless Audio M5</b>	★★★★★
<b>Sonos Play:1</b>	★★★★★

## HOW WE TESTED | SPEAKER SYSTEMS

When testing these speakers, we initially started off with one speaker at a time, using each manufacturer's iOS app running on an iPhone to connect a single speaker to our office Wi-Fi network. We then used the manufacturer's iOS app to play a variety of songs that were stored locally on the iPhone. Where possible, we also streamed a number of songs from a Spotify playlist. The audio quality for the Spotify test will, of course, depend on a number of different factors – not just the quality of the speaker itself – but the main purpose of this test was simply to see how well the speaker's own app

supported these third-party streaming services.

The next step was to add a second speaker in a separate room, again using the manufacturer's own iOS app to link the two speakers so that they played the same music in both rooms. As well as assessing the sound quality we also wanted to make sure that each pair of speakers was playing together in sync, and that there was no significant lag as we moved from room to room. Finally, if possible, we also attempted to play music from our iTunes library running on an iMac, as well as attempting to stream the Apple Music service from within iTunes.



**Multi-room playback involves additional problems, such as syncing the sound from two or more speakers.**



- 3 **Pure Jonga T4X**  
£150 pure.com
- 4 **Sonos Play:1**  
£169 sonos.com
- 5 **Samsung Wireless Audio M5**  
£200 samsung.com

### TEST THREE

## GETTING CONNECTED

Multiple rooms and multiple devices

➤ Most of these multi-room speaker systems are fairly easy to set up – as long as you have a mobile phone or tablet to get you started. They all rely on an iOS – or Android – app that guides you through the process of connecting one or more speakers to your home network, and then syncing them together to simultaneously play your music in different rooms.

However, these apps are less helpful when it comes to playing music from different devices and sources. The most extreme example here is the Philips Spotify speaker, which only works with the Spotify app on an iOS device. It won't play your existing music library from

iTunes on a Mac, or the Music app on iOS devices.

The LG Music Flow app is a little more flexible in this instance. It works with services such as Spotify and Napster, and can also play music that you have stored on your iOS devices. Unfortunately though, there's no Mac version of Music Flow, so you can't play music

*Only one manufacturer manages to break free from a reliance on its own apps...*

from iTunes on a Mac, or from the Apple Music service.

Samsung does provide a Mac version of its MultiRoom app, which can play music stored in your iTunes library, but you still have to use the iOS app as the remote control to play your music, which seems unnecessarily clumsy.

Sonos also has apps for both Macs and iOS devices, so you can play music stored on any device. The Sonos apps don't currently work with the Apple Music service, but Apple and Sonos have said they expect to get this sorted before the end of the year.

Only one manufacturer manages to break free from this reliance on its

own apps. Pure does provide an app for iOS devices, but it's also possible to play music from other apps and other devices as well. Admittedly, the process is a bit complicated, as it involves using both Bluetooth and Wi-Fi combined, but once that's done you can play iTunes on a Mac, including the Apple Music service, and even stream services such as the BBC iPlayer from your web browser.

### TEST RESULTS

<b>LG Music Flow H5</b>	★★★★★
<b>Philips Spotify SW750M</b>	★★★★★
<b>Pure Jonga T4X</b>	★★★★★
<b>Samsung Wireless Audio M5</b>	★★★★★
<b>Sonos Play:1</b>	★★★★★

## THE WINNER | SONOS PLAY:1

The reliance on the manufacturer's own iOS app means that some of these multi-room speakers aren't as flexible as we might have liked. There are, however, two outstanding exceptions here. The Pure Jonga T4X can play music from any source – including the Apple Music service – although using this ability is a little complicated and might confuse people who aren't familiar with Bluetooth and Wi-Fi technology. The T4X sounds good too, but it's the Sonos Play:1 that is the winner on sound quality, thanks to its rich, full sound and very satisfying bass output. It doesn't support the

Apple Music service yet – but that's on the way, and the excellent sound quality of the Play:1 represents really good value for a speaker costing less than £200.

### FINAL RESULTS

<b>LG Music Flow H5</b>	★★★★★
<b>Philips Spotify SW750M</b>	★★★★★
<b>Pure Jonga T4X</b>	★★★★★
<b>Samsung Wireless Audio M5</b>	★★★★★
<b>Sonos Play:1</b>	★★★★★





# B&W P5 Wireless

Hi-fi quality headphones without the wires could finally be here

★★★★★

**£330** Manufacturer Bowers & Wilkins, [bowers-wilkins.co.uk](http://bowers-wilkins.co.uk)

**Drive units** 2x 40mm **Frequency range** 10Hz – 20kHz

**Bluetooth codecs** aptX, AAC and SBC

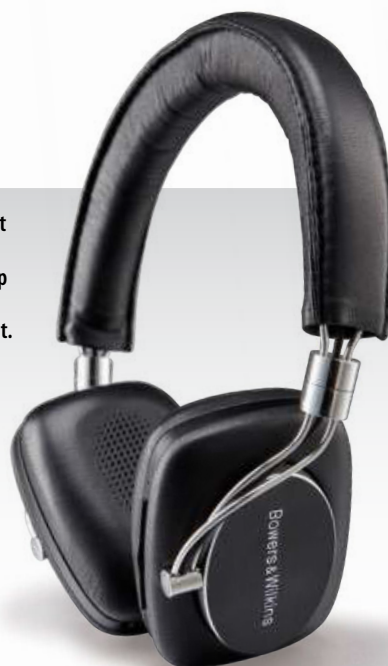
➤ These wireless headphones are small and lightweight but beautifully constructed and sturdy. Charged using a bundled USB cable, they boast a 17-hour battery life and have a fallback mini-jack cable that can be attached for wired operation if the battery runs out, or with non-Bluetooth kit. This is done by removing one ear pad, both of which are magnetically held in place.

They are on-ear models and the pads are very comfortable even for extended listening sessions. On the edge of the right cup are three buttons that let you alter volume,

skip or pause tracks, and take phone calls. There are two microphones built in to enable calling, and a dual-purpose button for turning on and pairing with another device.

The headphones sound great, with plenty of volume, bigger and more focussed bass than expected from relatively small cups, crisp mid range, and powerful but controlled highs. Interestingly, the sound quality and volume didn't alter when switching from wireless to wired operation. The headphones use the aptX codec for higher quality streaming (on the Mac) to get

You can connect the P5 Wireless by cable to keep listening if the battery runs out.



around the issue of Bluetooth bandwidth affecting audio quality, and also support the AAC streaming codec which is great for Apple Music on iOS. These are certainly among the finest wireless headphones around and they have an excellent sound stage. However, in this price range if you can live without wireless you can get some breathtaking reproduction from competing wired models. **Hollin Jones**



*The P5 Wireless sounds and feels gorgeous, with flawless streaming and an excellent sound stage.*

- ⊕ Extremely comfortable
- ⊕ Excellent wireless fidelity
- ⊕ Great battery life
- ⊖ Even better wired options

# AVM FRITZ!Box 4020

A surprisingly flexible router if you're looking to network on a budget

★★★★★

**£42** Manufacturer AVM, <http://en.avm.de>

**Connectivity** 802.11n Wi-Fi, 4x Fast Ethernet ports, 1x USB 2.0, UPnP AV server

➤ The 4020 sits more at the entry-level end of AVM's router line-up, and though fairly lightweight in construction, it still has some good features for the money. It can be used just as a wireless router, or also connected to any cable, DSL or fibre-optic modem, or a wireless dongle for mobile internet access. As well as Ethernet ports, it has a USB 2.0 port for connecting a dongle, or a printer or hard drive to share wirelessly.

The box works only on the 2.4GHz band with a maximum throughput

of 450Mbps, which will be fine for most users though slow for large file transfers. Signal strength was good, however, and there's a solid feature set that can be managed through a web browser. You get WPA2 security, guest access, automatic channel selection, a media server that uses SMB, FTP and UPnP to make music, pictures and videos available over the network, and parental controls, among other things.

Another nice feature is FRITZ!NAS, whereby signing up on the website

Small and lightweight but not lacking in software-based options.



enables you to access the contents of a connected hard drive even from outside your network, potentially using any internet connection.

This is a very affordable router with great features for home users and a relatively painless set-up procedure. It doesn't have cutting edge hardware connectivity but it has enough for regular users, plus a better depth of options and tools accessible in its software than you might expect. **Hollin Jones**



*A very affordable router with great features for home users, plus some set-up flexibility if you want it.*

- ⊕ Very affordable
- ⊕ Good depth of features
- ⊕ DNLA and NAS features
- ⊖ Only one USB port



# Netgear Arlo

A wonderfully flexible (if pricey) camera system for indoor or outdoor use



**£280 (two cameras), £360 (three)** Manufacturer Netgear, [netgear.co.uk](http://netgear.co.uk)

**Features** 720p HD video, weatherproof, motion activation, night vision

➤ Arlo is Netgear's new home security system with one key advantage over rivals – the system is completely wireless. Well, we mean the cameras themselves. The base station connects directly to your router using Ethernet.

Arlo definitely falls into the 'not cheap' category. The two-camera pack costs £280, while three is £360. Camera mounts are also available as accessories, while you can add extra cameras for around £110 each.

The packaging design cleverly puts the cameras on display at the top, but while it looks good in store it is a pain to open. Precious little instructions are included, but a leaflet directs you online for a quick start guide. We'd recommend doing

this before using the iPad or iPhone app to set things up. You can also set up through a website on a Mac. The set-up process auto detects your base station, but assumes you will have plugged in the cables already.

The cameras have night vision (up to eight metres), a 130-degree field of vision and can be used inside or outside – the cameras themselves are weatherproof, while the wireless range is cited as 90 metres. We had no issues putting them around our average-sized garden.

Clever magnetic mounts are also included – they are waterproof and not only provide the potential for wall-mounting, but they also mean you can point the camera at various angles. Two spare mounts mean you

can move the cameras depending on whether you're away, say, and you can screw a mount to a wall with provided mounting screws. The cameras can be used on flat surfaces without a mount. Each takes four CR123 batteries (included).

Video quality is excellent, and the cameras automatically adapt for exposure and colour balance. Video is also stored on free Netgear cloud storage, so you don't even need to worry about that. And, if there's low light, the camera switches to night mode. You can opt to receive push notifications and emails depending on movement in front of the camera, and adjust detection sensitivity.

However, it's important to caveat Arlo's general excellence with its price. It isn't outrageous for what it gives you, but cheaper options are available if all you want to do is watch a single location and you don't mind wires. **Dan Grabham**



*Much of Arlo's expense lies in its wirelessness and weatherproofing. If those matter, it's a great choice.*

- ➕ Moveable, wireless cameras
- ➕ Can be used from anywhere
- ➕ Cloud storage of video
- ➖ It's expensive

**The Arlo cameras are weatherproof and have clever magnetic mounts for tilting or wall-mounting them.**

## TEAM TALK



I live in rented accommodation, so relocatable cameras that don't even need to be screwed to a wall are appealing. That video is uploaded to the cloud and I can monitor my home from afar adds enough appeal to justify the high price.





# Manfrotto Digital Director

Turn your iPad into the ultimate digital SLR camera accessory



**£400** Manufacturer Manfrotto, manfrotto.com

**Weight** 0.29kg **Battery life** 15 hours  
**Mount type** 3/8-inch universal mount

Manfrotto describes this accessory for connecting your iPad Air (there are different models for the original Air and the Air 2) to your Nikon or Canon SLR as a “workflow management processor”, which deserves some sort of award for being the most astonishingly boring description for an exciting new bit of tech we’ve ever heard.

The Digital Director is a cradle for your iPad, and connects to its Lightning port. It then connects to a compatible camera using a USB cable, and, via the accompanying app, gives you a live feed of the camera’s view and control of its functions. But not in some middling way, like most camera companion apps. Manfrotto has been working with Canon and Nikon to get direct access to their pro cameras’ innards, to effectively recreate almost the full controls of the cameras in the app. You can’t change the camera’s

shooting mode from the app, but aperture, shutter speed, focus and much more can be adjusted live on the touchscreen, with the live view showing exactly what you’ll get on the iPad’s lovely big, detailed display. The app even adds some excellent features such as focus peaking, ensuring you always get the right part of the shot in focus.

Shots you take can be viewed right away on the iPad, and you can rate images as you take them (though these won’t carry over to management software such as Lightroom, sadly), and have them uploaded to an FTP server.

While this is all phenomenally exciting for things like video work or macro photography (the included one-metre USB cable means you can stay well back out of the light for this kind of shooting), the Digital Director isn’t perfect. We’ve already

mentioned its trouble tying in with Lightroom, but also it lacks true depth of field preview – when you change the aperture setting, the brightness of the image is adjusted to simulate the image’s exposure, but the aperture isn’t actually closed down, so you can’t see how depth of field changes.

Is it worth £400? If what you’ve read has you excited at the possibilities, you may have already made up your mind, and we think you’ll enjoy using it. But it’s a lot of money, is limited to certain cameras, and isn’t quite a home run yet.

**Ali Jennings & Matt Bolton**

Digital Director enables your iPad to talk directly to and control certain DSLR camera models from Canon and Nikon.



## TEAM TALK



It’s delightful to see a company merging two devices that normally sit apart into something even greater. After years of iPad use, the built-in viewfinder feels too small and awkward to navigate. If only it worked with my model.



The Manfrotto Digital Director contains its own processor for instant image processing.



Truly innovative and packed with potential for macro and video work. Despite its issues, it’s an exciting tool.

- + Touch control of some DSLRs
- + View live feed on iPad screen
- Poor integration with workflow
- No true depth of field preview

# Cricut Explore Air

Simply a cut above the rest in the world of home craft gadgets



**£255** Manufacturer Cricut, [uk.cricut.com](http://uk.cricut.com)

**Requires** OS X 10.9 or higher **Maximum size** 12x12 inches  
**Materials** paper, card, vinyl, fabric, poster board



Papercraft and textile arts at home are a massive market. But if you thought the joy came from painstakingly drawing and cutting things manually, this gadget will change your mind. We gave top marks to the original model (see MF275), a drawing and cutting machine masquerading as a printer.

Between the different paper stocks, vinyl, poster board, iron-on materials and even fabrics, Cricut reckons the Explore Air can deal with around 60 materials. That's simply staggering for a home tabletop

device that looks like it could just about manage a few slices here and there to make a basic birthday card. The intricacy that the Cricut can handle is clear when you download a complex design from the hundreds available in Cricut Design Space. That app, and the addition of Bluetooth connectivity in this model, make the Explore a winner once again.

Explore Air performs its magic with a two-part compartment that holds a pen on one side and houses the cutting blade on the other. There's an optional 'deep cut' blade

**The Explore Air looks like a regular printer, but it enables very different and wild creativity.**

for dealing with tougher materials too. For paper and card you use the supplied cutting mat, which has a sticky surface to hold your material in place. When using the iOS app to design, patterns that use multiple colours are simply divided into steps, and you're prompted when you need to swap in different material. The Explore Air is simple to use and makes lovely looking things.

**Christian Hall**



*Hobby crafters will love it, but it could easily get anyone addicted to, well, pretty much any home craft!*

- + Brilliant results, and fast!
- + Finally it's wireless
- + Easy to set up
- + Superb iOS app

# Personal Cloud 2-Bay 8TB

Cover your household's backup and storage needs with a single drive



**£360** Manufacturer Seagate, [seagate.com](http://seagate.com)

**Capacity** 8TB (2x 4TB disks) **Connectivity** Gigabit Ethernet, 1x USB 2.0, 1x USB 3.0

These days, network drives offer far more than just storage. Look beyond this one's slab-like case and you'll find that while it lacks some top-end features, it has enough functionality to satisfy most folk.

The 8TB of storage comes from two 4TB drives, set as a RAID 1 array by default. This halves the usable storage, but increases read speeds and gives redundancy against one drive failing. While you can switch to the full 8TB, consider that the USB

ports offer expansion options, alongside sharing a printer. Write speeds are par for the course at around 12MB/sec, and the mirrored array read at up to 85MB/sec.

User-friendly configuration tools are presented in your web browser, and they're easy to use – just flick a switch to enable access to your files over the internet, for example. The drive flawlessly supports core Mac services, including an iTunes audio server and Time Machine, and a



**Personal Cloud is reassuringly solid – in looks, functionality and performance.**

limited range of third-party services, including BitTorrent Sync and Plex, extends its capabilities. Mac and iOS apps provide access to files. Both do the job, but don't pull up any trees.

Sub-par apps aside, Seagate's solution hits the spot with a combo of good core functionality, reasonable performance and fuss-free setup. **Nick Peers**



*Personal Cloud is a versatile and reliable network storage solution that covers most people's needs.*

- + Decent set of features
- + Offers solid performance
- + Easy to set up and use
- Mobile app needs work



# Seagate Backup Plus Slim 2TB

Actually, you get more than 2TB of storage with this portable drive...

★★★★★

**£65** Manufacturer Seagate, seagate.com

**Requires** OS X 10.7 or higher (OS X 10.9 or higher for Seagate Lyve app)

**Ports** 1x USB 3.0 **Features** Two years of 200GB cloud storage, NTFS driver for OS X

➤ For the most part, portable external hard drives tend to be pretty much alike: compact boxes that wrap a disk in plastic or metal. This one is the latter type, so it feels tough. The model tested is the same size and weight as the 1TB version, which is just £15 less.

In terms of performance, its mean average transfer rates when reading (114.1MB/sec) and writing (124.7MB/sec) sequentially to the disk are

respectable. In our tougher test of accessing random locations, the mean average of 22.5MB/sec when reading isn't great, yet 67.8MB/sec when writing is pretty good.

The drive includes two years of online storage on OneDrive, which integrates with OS X just as easily as the likes of Dropbox and iCloud Drive. This space is useful for backing up your most important files, but also to transfer files to and from a

Windows PC without unplugging things. Or, if you need faster transfer of very large files in Boot Camp, the included NTFS driver means you can keep the drive in that format and also write to it from OS X.

Seagate's Lyve app consolidates photos and videos on the drive and makes them available to other devices online, but you might see that as redundant if you use iCloud Photo Library. **Alan Stonebridge**

The Backup Plus Slim's design is attractively simple, and its software bundle is, on the whole, good in selection and value.



*For the most part, a good performer for a drive of its kind, backed up with a practical software bundle.*

- Mostly good performance
- Appealing software bundle
- Well priced for what you get
- ⊖ Lacklustre random read speed

# Satechi F3 Smart Monitor Stand

Raise your Mac's display to a more comfortable viewing level

★★★★★

**£35** Manufacturer Satechi, satechi.net

**Connectivity** 4x USB 3.0 inputs, 1x USB 3.0 output (to Mac), 3.5mm passthrough ports for microphone and headphones

➤ Not content to just hold your iMac, this comfortably wide (21.7x9.1 in – about as wide as a 21.5-inch iMac) monitor stand aims to make it more convenient to use. There are four USB 3.0 ports on the front, so it's easy to attach a USB stick or plug in your phone for charging. Just connect the provided USB cable from the stand's rear to your iMac (or other computer of choice) to get going. It also has passthroughs for

3.5mm mic and headphone jacks (again, cables are provided), though in the case of the iMac this can be of limited use, since current models only offer a single port for both.

The stand doesn't have its own power supply, so if you connect several things, you might find they charge a bit slowly – not a huge problem, but something to be aware of. The stand itself is plastic along the top, with aluminum legs. It looks

This monitor stand looks better in photos, but at least it's affordable.



better in photos than in the flesh, sadly, but it's far from ugly – just quite plasticky. Ours had a bit of concerning wobble when we placed our iMac on it, but seemed perfectly sturdy after that – we never worried about the iMac falling off. It stands reasonably high off the desk, with plenty of space to fit a Mac mini under it, as well as most external hard drives (when kept on their sides, at least). **Matt Bolton**



*A big stand with useful features, but a few flaws – most notably that it doesn't have an external power supply.*

- Easy USB port access for iMacs
- Good price
- ⊖ Would be better if self-powered
- ⊖ Plastic build not that classy

Tiny and a little plain-looking, the Muvo Mini is surprisingly good quality and value.



## Creative Muvo Mini

A highly capable weatherproof and dustproof Bluetooth speaker, and at a bargain price to boot!

★★★★★

**£50 Manufacturer** Creative, <http://uk.creative.com>

**Dimensions** 19x3.7x5.9cm **Connectivity** Bluetooth 4.0, 3.5mm Aux-in, micro-USB

➤ We've seen mighty sound packed into small form factors, options with incredible battery life and even some that can take a tough tumble. But we haven't seen a single speaker that can accomplish all of these feats – until now.

The Muvo Mini's design will split opinion. Some will appreciate the minimalism, but others will think it uninspired. Given the cost, most will be impressed with the build quality.

The body is covered in a smooth, matte plastic. Ours was grey, but there are red, blue and white options too. The front is capped with a grille, which itself has neat design touches. Beneath it, a mesh layer covers the dual drivers and the bass radiator.

On the top are buttons for power, Bluetooth and volume, and LEDs for connection and battery status. When held, the Bluetooth button pairs a device, and it answers and ends phone calls when pressed.

On the back, a rubber flap covers the micro-USB and 3.5mm ports. Make sure it's closed if the speaker will be exposed to dust or water.

The Muvo Mini is weatherproofed, with an IP66 rating that means it's entirely dustproof and waterproof just shy of being submerged.

Sound quality excels at avoiding distortion even at volume. The bass radiator does an admirable job with low-end notes, even though this is the speaker's weakest area. Even so, the gamut of music genres sounded full of warm mid range and highs.

We experienced no audio artifacts or drop in connection over 30 feet, even through a few walls. As a speakerphone, call quality was fine. Also, the battery met the hearty quoted duration of 10 hours easily.

This tiny box's functionality and performance warrant a considerably higher price. It's the best value for a durable and capable Bluetooth speaker. **Cameron Faulkner**

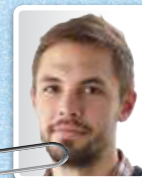


*The Creative Muvo Mini contains every desirable feature you seek out in a Bluetooth speaker. For £50, it's an unbeatable deal.*

**We're still loving...**

## BASSJUMP

Alex pumps up his MacBook bass with this elegant booster



For all their majesty, there's still something MacBooks lack that would make them near-perfect: top-notch sound quality. Let's be fair, your standard MacBook speakers will never be able to compete with high-end studio setups; they're not bad, but they still leave much to be desired. Sure, you could shell out several hundred pounds on a good audio system and hook it up to your laptop – or you could pay less than £50 for Twelve South's BassJump. For the results it delivers and the price you pay, it's an outstanding bargain.

It's not a speaker, though; rather, the BassJump provides the bass output that your MacBook lacks, and for many people that's all that is required. It makes a world of difference: your MacBook Pro will sound even better than it already does, while your MacBook Air will be almost unrecognisable. It really is that good. While it may not please the most serious audiophiles out there, it's an excellent piece of hardware for the rest of us.

As with all Twelve South kit, BassJump looks gorgeous sitting next to the Apple gear arrayed on your desk. Now is the perfect time to take the plunge, as Twelve South has just updated the BassJump software and given it a welcome lift ready for the release of El Capitan. All this for a fraction of the cost of a new speaker set? For me, it's a no brainer.





## EVUTEC KARBON SI

★★★★★

**\$49.95 (about £32) Manufacturer** Evutec, [evutec.com](http://evutec.com)

1 Unlike many protective cases, the Evutec Karbon SI is sleek and unobtrusive. It comes with MIL-STD-810G certification – fancy talk for saying it's military-grade strong. It's scratchproof (to a degree), contains Kevlar and claims to be five times stronger than steel at the same weight, which should protect the back of your iPhone from all kinds of rough and tumble. There's no protection on the front, though, which may limit its appeal.

The lock button cover also isn't very tactile, but this is a minor quailm. For such a slimline case, it's seriously impressive. **Alex Blake**

**Mac**  
FORMAT  
VERDICT *A sturdy, lightweight case that offers heavy-duty protection for your iPhone while remaining slim. Lock button is a minor flaw.*

## SUPERSTAR BACKFLOAT

★★★★★

**£120 Manufacturer** Monster, [shopmonsterproducts.co.uk](http://shopmonsterproducts.co.uk)

2 There are quite a few rugged, outdoor speakers available right now, but we got to throw the BackFloat across the room during a recent demo, so we can attest that it really can take a beating. It's waterproof and, as the name implies, is designed to float so that you can let it drift around a swimming pool while you lie back and relax on holiday. It has Bluetooth for wireless streaming and a seven-hour battery life. It sounds good too, with a strong, clear sound and a respectable amount of bass for such a compact little speaker. **Cliff Joseph**

**Mac**  
FORMAT  
VERDICT *Though the SuperStar Backfloat is a little pricey, its tough and waterproof design will earn its keep on holiday.*

## TT ESPORTS CONTOUR

★★★★★

**£50 Manufacturer** Thermaltake, [ttesports.com](http://ttesports.com)

3 This iOS game controller is full-size, like those for Xbox One or PS4. A flip-up clip holds an iPhone or iPod touch, but it didn't fold back enough for us; when our hold or line of sight was good, the other became awkward.

Otherwise, it's pretty good to use. It feels solid and is a nice weight (yet a phone makes the back a bit hefty). Its face buttons feel crisp in action. The analog sticks are fairly stiff, but give good feedback. It's hard to feel direction from the d-pad, making precision hard. The analog shoulder buttons are a little on the soft side, with fairly short travel. **Matt Bolton**

**Mac**  
FORMAT  
VERDICT *A good controller, but it's a better clip and some d-pad feedback away from being a great one. Still worth buying, though.*

## LOGITECH MX ANYWHERE 2

★★★★★

**£61 Manufacturer** Logitech, [logitech.com](http://logitech.com)

4 This great little mouse is small enough to carry with a MacBook, yet two key features are great for any Mac.

One is its 'Darkfield' laser sensor, which tracks movement well on just about any surface – on windows, jeans, shiny magazines... anything difficult, we got perfect results.

Second is the button on top. You assign gestures to it in Logitech's app, then hold it and move the mouse in one of four directions to trigger them. We found it a bit far back for comfort, but it offers great possibilities for creative work or getting around OS X. **Matt Bolton**

**Mac**  
FORMAT  
VERDICT *A really well-made mouse that works everywhere and lets you use useful Mac gestures without fingering a trackpad.*

*The best OS X Yosemite guide money can buy!*

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*5 of the best...*

# Apple Watch stands

Give your Apple Watch some love with one of these great charging stands for your bedside table



## JUST MOBILE TIMESTAND

★★★★★

**£35** Manufacturer Just Mobile, [just-mobile.eu](http://just-mobile.eu)

**1** Just Mobile's TimeStand is the smallest of the Apple Watch stands in this test. The HiRise is slightly shorter but the footprint of the TimeStand is tiny at just 48mm across. With even a 38mm Watch on it, the stand looks a little too compact, and it's not that sturdy given how heavy it seems. We adore the design though, wrapping the strap through a hollowed out section in an otherwise cylindrical structure. The Nomad stand copies this approach but in a flatter and more curved one-piece design.

It's often awkward for the charging cables on Watch stands to be tidy, but Just Mobile's effort works well, running the bulk of the cable down the left-hand edge of the stand, then out the back. It looks great in silver or black.



## ORZLY DUOSTAND

★★★★★

**£25** Manufacturer Orzly, [orzly.com](http://orzly.com)

**2** This stand is a bit quirky, designed to hold an iPhone (in portrait or landscape) on one pedestal, and the Apple Watch on another, higher one. It looks a little awkward, and we struggled with the bizarre angle that the Watch sits at. The backwards tilt is ok, but it's then angled slightly inwards towards the iPhone stand which doesn't feel quite right. The metal quality and finish aren't the best, but it's very lightweight.

The worst element is the clumsy cable solution. The stand's thinness is nice, but there's nowhere tidy to trail a charging cable. The iPhone stand doesn't have this issue as a Lightning connector threads neatly at the front. The DuoStand is well priced, and many will like its dual use, but it's just not as elegantly executed as most of the others.





## TWELVE SOUTH HIRISE

★★★★★

**£35 Manufacturer** Twelve South, [twelvesouth.com](http://twelvesouth.com)

3 Twelve South's stand is our favourite stand for angle. If you have a bedside table that's at the same level as your bed, or slightly below, you can easily see the whole watch face. The tilted-back angle of the others suits much lower sidetables, so always keep that in mind when deciding which stand suits you best.

We also love the cable solution, which keeps it out of sight by running the bulk of it under a plastic flap at the back. It's a shame that part is not quite the same colour as the metal part of the stand, but it's passable. The Watch strap, whatever variety, fits neatly by sliding through a gap at the bottom and also over the top of the holding area, held on by the magnetic charging cable.

## GRIFFIN WATCHSTAND

★★★★★

**£20 Manufacturer** Griffin, [griffintechology.com](http://griffintechology.com)

4 When we first saw this effort from Griffin we were put off by its joystick-like design. It's also far taller than the others and looks ungainly. But with the Watch in place we warmed to it over time. It's a solid stand and is the only extendable one here. The all-plastic body didn't bother us and it didn't feel cheap.

We also liked the fact you can use the front as an iPhone stand too, a bit like the Orzly, but it's far more subtle and just as useful.

The WatchStand's best feature is how it holds the Watch. Because it's so tall you just unfasten a strap, like the Sport band, and drape the bottom part of the strap downwards. If you want the watch to be horizontal you can rotate it easily and it holds firm with the charging cable's magnet.

## NOMAD STAND FOR APPLE WATCH

★★★★★

**£45 Manufacturer** Nomad, [hellonomad.com](http://hellonomad.com)

5 Nomad's stand is a clear winner on looks. This looks like it was designed by Apple and really presents the Watch at its best.

That wouldn't mean a lot if the stand didn't prove useful, however. Thankfully, it's almost perfect. It could do with a slightly heavier bottom element if we're being brutally honest. That would help prevent you knocking it backwards on occasion, when you try to snap the Watch onto the charger.

The charging cable is really well disguised on the Nomad stand, running all the way along the curved design and then slightly under the dock before trailing away at the back. It's easy to thread it on, and once in place looks like there's no cable there at all – even better than the TimeStand's tidy solution. We love it! **Christian Hall**



# Keyboard Maestro

Press a couple of keys to do (almost) anything with your Mac

★★★★★

**\$36 (about £22) Developer** Stairways Software, keyboardmaestro.com

**Requires** OS X 10.10.3 or higher



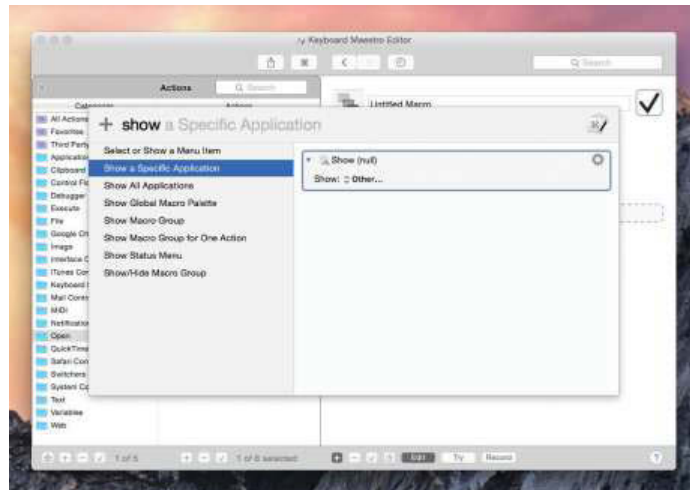
Keyboard Maestro is all about controlling your Mac with user-defined macros, comprised of a

trigger and one or more actions which range from simple hot-key commands through to more advanced interactions that can be based on specific conditions.

The app shows you how to set a function key to open your Home folder – simple. A more complex action is also provided which copies a selection, switches to the last used app, pastes, and then switches back again. Naturally, the sky's the limit

once you get a handle on how to create your own macros.

Version 7 offers a range of new triggers and actions. Triggers now include keys tapped multiple times, window focus changes, and updates to folders. The last of those means you can be notified when new files are added to a shared folder. Actions have gained options that bring new smarts and complexity to macros, and it's good to also see the app making things easier for anyone creating them. There's a new gear menu in every action for access to contextual operations, an Add



**The new Add Action bar seriously speeds up the process of creating macros.**

Action Bar for rapid access, and autocompletion of text and search tokens, functions and variables.

Keyboard Maestro still doesn't look especially pretty (the theme editor's palette styles come across as gaudy), but otherwise this is a solid update to a very capable app.

**Craig Grannell**



*Still a bit ugly and a touch daunting for newcomers, but this remains a macro app with serious ambition.*

- + Useful new actions and triggers
- + Now faster to create actions
- + New macro inspector
- Daunting for beginners

# Armature

Save time when mocking up ideas with a drag-and-drop graphics library

★★★★★

**£18.99 Developer** Grey Goo Software, greygoo.io

**Requires** OS X 10.10 or higher

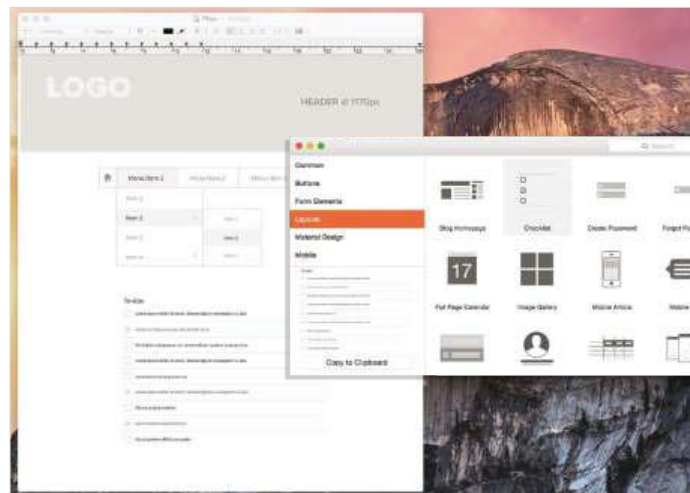


A crucial aspect of designing a software or web interface is prototyping: going

through ideas to refine them down to one that works. Mocking up an interface can take almost as long as actually building one. That's where Armature comes in. It's essentially a collection of pre-made graphical elements designed to assist you with planning or wireframing projects. Rather than build your own generic graphics to illustrate how something might be laid out, you simply pull them from this library.

Previously an extension for Adobe Illustrator yet now a standalone Mac app, Armature is simple to use: select a category of interface elements, find the one you want and copy and paste it into your app of choice. Obvious candidates for building mockups include Photoshop and Illustrator, but Armature also works well with Microsoft Word, TextEdit and OmniGraffle.

Objects are easily resized and manipulated once inside your design app, and Armature's selection of graphics is good, covering most of the kinds of interface elements you



**Search, drag and drop pre-created wireframe graphics for layout planning.**

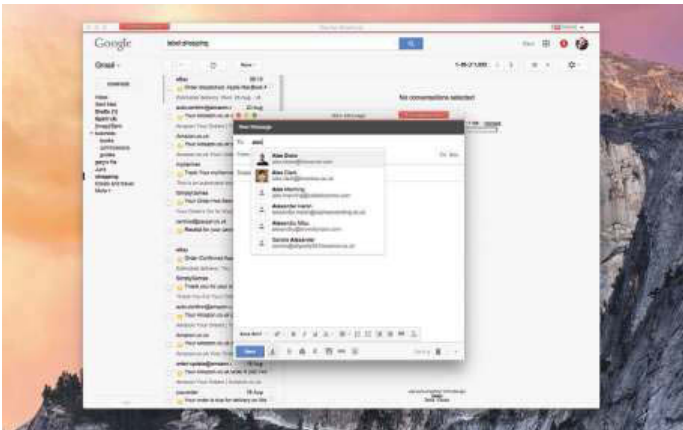
need to create plans and wireframes.

Although it's very efficient to use and certainly speeds up prototyping, the price seems a little high for what is essentially a collection of 150 graphical elements to paste into other apps' documents. If you do a lot of wireframing, that's maybe not such an issue. **Hollin Jones**



*Armature's a handy timesaver for app developers and web designers, though it's a little pricey for what it is.*

- + Speeds up prototyping
- + Good selection of elements
- Quite an expensive, small library
- Better apps for layout planning



Kiwi looks just like Gmail, and that's the point: it's Gmail without the browser.

## Kiwi for Gmail

Take Gmail out of your web browser with this fast and friendly email app



**Free or £7.99 Developer** Zive, [kiwiforgmail.com](http://kiwiforgmail.com)

**Requires** A Gmail account, OS X 10.8 or higher



If Gmail is your email service, you have probably encountered a familiar problem: the service was designed to be used in a browser, and using a desktop email client to access it means losing some of its power. Kiwi is designed to change that by delivering the full Gmail experience in a dedicated desktop app that's less demanding than a browser, but as powerful as you want Gmail to be.

There are two versions of Kiwi: a stripped-down Lite version for single accounts, and a paid-for version, which supports up to six accounts, keyboard shortcuts, account themes and the ability to restrict notifications to messages flagged as important. The latter will also support third-party plug-ins, although it doesn't currently do so.

The first thing you'll notice is that Kiwi really looks like Gmail, and that's the point: you don't need to change how you do things. There are some differences, though. An icon in OS X's menu bar enables you to see your unread message count and compose a new email. In the paid version, that covers all your accounts.

In addition to Gmail itself, Kiwi also supports Google Apps (so it works with corporate and educational Gmail accounts) and integrates Google Drive and Chat. The paid version also has a useful 'zen button' that turns off email notifications until the following day without affecting notifications from other apps in OS X.

If you're happy using third-party email clients, Apple Mail or a pinned Safari tab to access Gmail then this might not be for you, but if you want the full browser-based Gmail experience without the browser bit, we think you'll like Kiwi a lot.

**Gary Marshall**



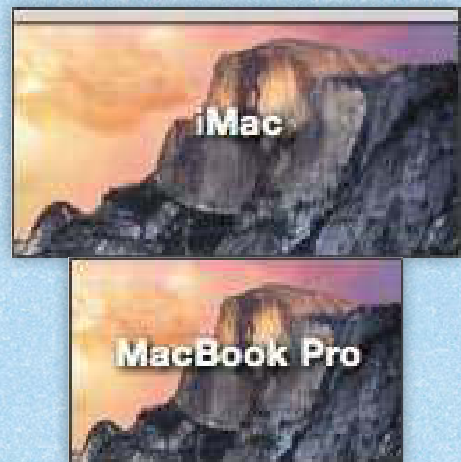
*Kiwi is fast, friendly, frees Gmail from the browser, and makes multiple accounts much easier to manage.*

- ⊕ It's Gmail without the browser
- ⊕ Great for multiple accounts
- Third-party plug-ins "coming soon"
- Doesn't have an offline mode

**We're still loving...**

## TELEPORT

**This brilliant virtual KVM switch makes Alan feel in full control**



Often I'll have a desktop Mac and my MacBook Pro next to each other, with things like Twitter, news sites and email on the MacBook while I do work on the larger screen. However, I don't want to have to reach for the MacBook to control it. That's where Teleport (free, [abysssoft.com](http://abysssoft.com)) is helpful.

After installing it on two Macs, you specify their physical arrangement, much like you would for multiple displays in System Preferences. You can then move the pointer from the Mac whose input devices you're using to the other one – or at least it seems that way; Teleport is actually transmitting your input to the other Mac over your network.

You can specify a modifier key to hold down to prevent the pointer accidentally being moved between Macs, or simply adjust the delay before the pointer is allowed to make the leap. Teleport also enables you to drag files from one Mac to another (which I use in place of OS X's File Sharing feature), and it can sync the Clipboard's contents, too.

Teleport is even able to transmit keyboard input to another Mac – whichever the pointer is on – and its preferences include an option to encrypt what is sent in case you're using a shared network. Considering it's free, Teleport is a delightfully effective way to comfortably use two Macs side by side if you can't justify the cost of, or desk space for, a KVM switch.



# Tonality 1.2

A monochrome imaging app with plenty of tricks up its sleeve



**£13.49 Developer** Macphun, macphun.com

**Requires** OS X 10.8 or higher



Most image-editing apps can quickly make a monochromatic image, but not all give you full control over the end result. Macphun's approach to the complex task of producing a good black and white image is Tonality, which applies a series of editable mono filters to your image.

The latest update brings with it an improved image processing engine and new layer effects, plus support for Force Touch trackpads along with a wider range of raw files. You can also send your edited files directly to other Macphun products, Photos, iPhoto, Aperture, Photoshop or Lightroom (sadly, there's no support for Serif's new Affinity Photo, reviewed in *MF291*). Shell out for the Pro edition and Tonality becomes a plug-in that runs inside many of those apps.

Open an image file in the app and it immediately becomes black and white. Along the bottom of the interface runs a bar of effects chosen from a Presets menu, each one immediately previewing the image you've loaded. Click on one of those effects and it's initially applied at 100% strength – you can then drag

**Presets allow quick and easy monochrome results but you can fine-tune endlessly.**

a slider on the preview thumbnail to decrease the intensity of the effect. Furthermore, a panel on the right can be used to alter the effect further, with a tone curve graph, colour temperature and exposure sliders, and tools for split toning and

*Tonality is capable of all sorts of colour effects and vintage looks, especially when you apply its grain and film effects*

adding colours back into the image.

Despite Tonality being marketed as dedicated to monochrome images, all the colour information from your pictures is preserved – the saturation sliders are just set to zero.

Far from being an app that just makes black and white images, Tonality is capable of all sorts of colour effects and vintage looks. That's especially true when you factor in the app's grain and film effect filter, which can load a custom

texture file, in addition to those included with the software.

A layering system allows you to build effects on top of one another, blending and masking (including new luminosity masks that select pixels based on brightness) to build things up to complex effects and sophisticated images. Once you're finished, your creations can be shared directly to social networks or photography sites, or export them to your hard drive.

Tonality tends to produce haloes around areas of high contrast in an image, much like overuse of the Clarity slider in Lightroom can. Otherwise it's a competent image editor with an approach to altering your image that's as simple as you want it to be.

**Ian Evenden**



**Despite its emphasis on black and white, Tonality is also highly capable of a variety of colour effects. You can add grain and film effects to your images, too.**

## TEAM TALK



**I love black and white images and for such a small price I think Tonality is well worth adding to your photo-editing arsenal. But, perhaps only if you've not mastered monochrome in other photo apps you own.**



**A great choice if you're into monochrome photography, and its colour editing options are a bonus.**

- ⊕ Runs really fast
- ⊕ Supports many file formats
- ⊕ Plays well with other apps
- ⊖ Rather narrow appeal

## OPTOPT 1.1

Launch apps via your keyboard

★★★★★

**79p Developer** Jian Hu, [twitter.com/jianhucs](https://twitter.com/jianhucs)

**Requires** OS X 10.10 or higher



OptOpt aims to replace the OS X app switcher by adding the ability to launch or switch programs using keyboard shortcuts. It's a worthy idea, but let down by poor execution.

OptOpt is fiddly to set up – you have to manually enable it in Accessibility preferences, and then you must set up custom keyboard shortcuts for your favourite apps using its menu bar icon. This is critical as it allows you to launch apps that aren't running (and therefore on display in the OptOpt app switcher), but you do have to remember your custom key

configurations. Matters are further complicated when you consider that apps are only available to configure when they've run alongside OptOpt, so it can recognise them.

Once you get past all these hurdles, press **⌘** twice to reveal OptOpt, then your shortcut to access an app. It works, but the effort involved makes OptOpt impossible to recommend in its current state. **Nick Peers**



*This keyboard-driven app switcher is a nice idea, but its flaws outweigh its marginal benefits.*

## NICE CLIPBOARD 1.0.1

Manage and sync your clippings

★★★★★

**£2.29 Developer** Nice Apps, [getniceapps.com](https://getniceapps.com)

**Requires** OS X 10.10 or higher



Clipboard managers are almost ten a penny, so Nice Clipboard needs something special to stand out. Sadly, it fails to deliver anything truly innovative. Its main selling point is syncing clips via iCloud between Mac and iOS (another £2.29 purchase), but you can get similar functionality for free with CloudClip.

Nice Clipboard also stacks up poorly to rival apps like Copy 'em Paste, with just one tweakable setting available which limits the number of clippings. At least it sports a neat design that complements

Yosemite perfectly and allows you to view your clippings in a resizable and movable floating window. There are also some useful buttons when doing so: View to preview media, and Show for revealing a copied file's location in Finder.

If you're looking for a basic, no-frills tool, it may appeal, but if you want a wider range of management tools then look elsewhere. **Nick Peers**



*Nice Clipboard is sleek and simple, but lacks the flexible options found in other Clipboard managers.*



ZeitNote gives you an overview of time spent in apps, but it's a bit too simple.

## ZeitNote

Find out where all your time's going

★★★★★

**£2.29 Developer** Denis Krasulin, [zeitnote.com](https://zeitnote.com)

**Requires** OS X 10.10 or higher

**Z** Making an app uncomplicated and simple is usually a smart move, but sometimes a developer can take things a bit too far. This is the feeling we get with ZeitNote, which pares personal time tracking to the bone.

The basic concept is fine, though not unique on OS X; you fire up the app (or just add it to your login items for best results), and ZeitNote tracks the ones you use and how much time you spend in them. ZeitNote's developer points out there aren't really any ways to 'cheat' the app, but then if you feel the need to cheat, you probably shouldn't be using ZeitNote or any of its contemporaries anyway.

As long as you've spent over a minute in an app, you'll get feedback from ZeitNote, presented inside a window available from the menu bar. Click on the ZeitNote icon and you see a bar chart that shows the apps you've used, and how long you used each of them. Underneath you'll find a single line representing the entire day (running from midnight to midnight). White areas denote active times on the Mac, and a faded line indicates the Mac was idle or asleep at that time. Select any

of the apps in the chart and its usage is then displayed over the aforementioned line. ZeitNote is easy to use, and although it's not especially beautiful, there's enough clarity where it matters.

And that's about it. You can click left and right arrows to view data from other dates, although you can't jump straight to a specific day. More frustratingly, there's no means of exporting your data. For personal timekeeping on a purely at-a-glance basis, this is fine, not least given the app's low price tag. However, it would be good to have access to trends about your app usage within ZeitNote, or at least the means to get at the data it records, so that it can be examined and explored elsewhere. **Craig Grannell**



*ZeitNote is not a bad option for personal time tracking, but it could do with more scope regarding collected data.*

➕ Seems to be pretty accurate

➕ Simple enough to use

● No data export features

● Fiddly to view previous data



# Volume

A sci-fi Robin Hood, livestreamed

★★★★★

**£14.99 Developer** Mike Bithell Games, [mikebithellgames.com](http://mikebithellgames.com)

**Requires** OS X 10.10.3 or higher, 1.4GHz processor, see site for graphics cards



'Volume' is a pun on the game's themes of speaking truth to power, and to its signature mechanic – a whistle used to distract roving guards. Also, the game is presented almost entirely in volumetric virtual reality: all glowing walls and sharp, polygonal enemies.

Rob Locksley broadcasts a series of stealthy heists from the simulated homes of the rich and powerful in hopes that his viewers will commit genuine robberies, thus subverting the kleptocratic government of near-future England. One hundred discrete mazes are guarded by pattern-bound soldiers and studded

with force fields and lasers. The goal is to steal every gem and escape.

Subtlety and nuance are fortunate by-products of the stringent puzzle design. A patrolling Pawn may have to be lured to a specific point to give you time to get away, for example. This sounds fussy, but new concepts are introduced gently and stacked in increasingly satisfying ways.

Each level has a par time. This focus on efficiency may be most congruent with the game's framing, but it's not the only approach. Patience may mean you're never spotted, but revealing yourself can be a tactical decision. The myriad user-created levels show the



**Pink isn't a good colour on Locksley because it means he's about to be shot.**

mechanics are unambiguous and consistent, but allow for remarkable flexibility. The script is wry and touching in small moments, yet despite touching on weighty topics like xenophobia, voyeurism and class, neither the plot nor the game's politics crystallize beyond your foe's obvious villainy. **Joseph Leray**



*When undistracted by its talkative plot, Volume offers distilled and unencumbered stealth action.*

- ⊕ Clear stealth mechanics
- ⊕ Mostly allows approaches
- ⊕ User-created levels
- ⊖ Plot never executes on its drama

# Shelter 2

A very different kind of lynx effect

★★★★★

**£10.99 Developer** Might & Delight, [mightanddelight.com](http://mightanddelight.com)

**Requires** OS X 10.7 or higher, 2.6GHz processor, see website for graphics cards



Behind all things bright and beautiful, nature is a brutal place. No rules, save the inherent ones of tooth and claw. No mercy. No sympathy, not even for a pregnant mother lynx in desperate search of a new home. Shelter offers both sides, but it's important that it starts out by making you the prey – alone and weak in the snow, with wolves quickly closing in. Later, having escaped and birthed cubs, you get to show your teeth – hunting other animals through the defrosting wilds and fighting to ensure your family lives long enough to create a new generation of furry little adventurers.

Shelter 2 is an extremely pretty game, eschewing realism for a painted look but still conveying enough detail to feel for the cubs and their exhausted mother. Where it falls down though is that at heart, there's really not that much to a lynx's life, and once you've got into the basic rhythm of things there's not a lot more left to discover.

Hunting is a simple matter. There aren't many threats to worry about. Food is at least plentiful enough. It doesn't take long before all that's left is the mood, with Shelter quickly becoming far more of an art game than a survival simulator. It's effective as that, and there's little else out



**Unfortunately, Shelter's beautifully artistic style can't make up for its short length.**

there like it, but even so it's hard not to find yourself wishing that there was more to it than watching the scenery change and feeling empathetic towards polygonal furry critters. The whole thing is over in just a couple of hours, yet somehow, it still reluctantly outstays its welcome. **Richard Cobbett**



*A fascinating experience while it lasts, which isn't long enough even for Shelter's short length.*

- ⊕ Good sense of character
- ⊕ Emotional connection
- ⊖ Very little to it
- ⊖ Not enough tension

# COMPANY OF HEROES 2™



## OUT NOW



[WWW.FERALINTERACTIVE.COM](http://WWW.FERALINTERACTIVE.COM)



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After a few hours of play, you'll think you know this woman so well – until a new video changes your perspective again.

# Her Story

Finally, a detective game worth investigating

★★★★★

**£3.99** Developer Sam Barlow, herstorygame.com

Works with iPhone, iPod touch, iPad Version 1.1



Games have always struggled with making you a detective. Their rigid systems just can't satisfy our complex curiosity. You'll have questions and places to explore that the game doesn't allow.

Her Story brilliantly sidesteps games' accidental restrictions by giving you intentional ones instead. You have to sift through a 20-year-old computer archive, reviewing police interview tapes of a woman,

taken over several days after her husband's disappearance. You can't view them chronologically. Instead, you search transcriptions of the evidence to find relevant clips. Only five can be returned at once, so looking for obvious results only gets you so far. You use hints from them to find more: a new name or place might reveal new videos.

Knowing the limits of the system you must work in, frustration makes way for figuring out creative ways to

use it. This makes your game unique. The story contains many secrets, and how and when they're reached depends on which threads you pull. Some revelations are big twists if you haven't seen videos that provide context – everyone gets a different "Aha!" moment. This lets you feel smart in a way few games have managed – it feels not like solving a puzzle, but uncovering the truth.

The lone cast member gives an intriguing performance – sometimes suspicious, other times sympathetic. As you pick apart the contradictions and hints, spinning theories, you'll feel like you're unleashing your inner Richard Castle. **Matt Bolton**



## TEAM TALK



If you're sick of shooters and weary of RPGs then this game truly demands attention. It's no less exciting than a gung-ho gunslinger but takes you on a totally different journey. One of the most intriguing concepts we've seen.



*An engrossing, exciting and unique mystery experience. A truly essential game that you shouldn't miss.*

- ⊕ Your game is unique to you
- ⊕ Clever layered story
- ⊕ Good central performance
- ⊕ Also available on Mac



No matter what happens to Heroki, he's always happy. Be like Heroki!

# Heroki

The propeller beanie finally takes off

★★★★★

**£3.99 Developer** Sega America, heroki.com

**Works with** iPhone, iPod touch, iPad **Version** 1.0.1



We're not entirely sure if Heroki is man or beast, but then again what was the deal with Sonic? Being an anthropomorphised hedgehog with one giant, terrifying eye didn't stop him becoming Sega's most iconic character. We're not saying new Sega stablemate Heroki's helicopter-based head propels him to such lofty heights, but it's a pretty nice way of getting about.

You spend almost no time on the ground, instead working through 2D levels of platforms, tunnels and caverns by air – and the occasional dive-bomb. There are three control schemes (pulling, pushing and – our preference – an on-screen joystick), and while you'll often overshoot tight turns, it does feel in keeping with a character who transports himself via head-mounted rotor.

Combat is never tricky; tap a box or rock to pick it up, then drag to fire it at something. If you're poorly prepared, it will catch you out. Float glibly and speedily right into a nest of vicious parrots and you're likely to take a few hits. If you're venturing into the unknown, you'd best hope there are projectiles nearby.

In some ways, that's Heroki in a nutshell: underestimate it at your own peril. As well as making your way from starting point A to finish ring B, solving environmental puzzles along the way (often a matter of finding switches to open barriers, bopping lizards and putting them on buttons, or lugging keys about), you also need to collect as many as possible of the five Emirals scattered across the level. That means some seriously thorough exploration, and they're not optional trinkets: at the end of each world, you need a certain number of Emirals to progress through the next world. Don't have enough? Back you go.

The game demands more of you than its cheery surface suggests. It's refreshing not to be dragged through by the hand, but we'd have liked a little more of Sonic's speed and a little less of the busywork.

**Emma Davies**



*A sleek and shiny platformer with neat set pieces, yet the focus on exploration means it doesn't spin as fast as Sonic's feet.*

# PRUNE

A game that grows on you

★★★★★

**£2.99 Developer** Joel McDonald, prunegame.com

**Works with** iPhone, iPod touch, iPad **Version** 1.0.21



Prune is about growing trees out of the shadows to bloom in the light. A tree can only grow a certain total length of branches, so to make sure the trunk can grow long enough to reach the light, then spread out to bloom into enough flowers, you need to quickly trim away any extraneous branches.

In this way, you can also influence its direction as it forks, steering the growth around obstacles and out of dead ends. Swiping across branches to chop them must be done both precisely and

frantically, in contrast to the game's zen aesthetic.

Eventually you'll have to grow via a certain point of the level, deal with wind affecting the direction of branches, or avoid things that can stunt growth altogether. The game is rapidly moreish. We found chopping branches imprecise at times, but you can regrow a tree instantly, so it's not frustrating. **Matt Bolton**



*A quiet, flowing, engrossing game of creation that might be 2015's Monument Valley.*

# RACE THE SUN

Spoiler: the sun wins

★★★★★

**£3.99 Developer** FlippFly LLC, flippfly.com

**Works with** iPhone, iPod touch, iPad **Version** 1.01



The thing about endless runners is they're badly named. You usually reach a very sudden end. Good examples like this one do a great job at giving you incentive to keep trying.

You're in a solar-powered vessel and the sun is going down, so you're racing toward the horizon to stay in its light. The closer to the left or right edge of the screen you touch, the sharper you steer in that direction. Obstacles start off fairly sparse and stationary, but grow more complex and mobile. Avoid them or it's all over. Their shadows grow

longer and more dense as the sun sets, slowing your pace.

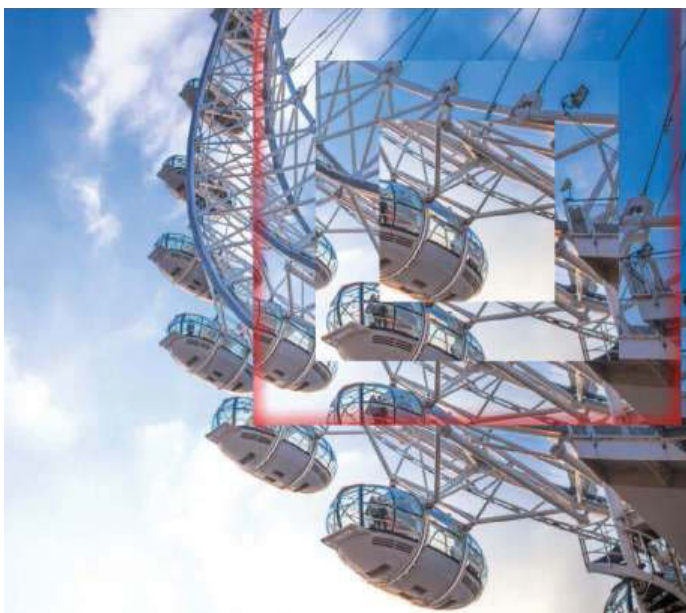
The worlds are vast, and you play each one for a day, learning where choke points are and trying different routes. The next day you enter a new world, which balances gaining familiarity to go for high scores with variety. You can level up your craft too, which adds to the game's longevity.

**Matt Bolton**



*A smartly made and fun endless game, though it's best once several of its secrets are unlocked.*





Fragment has a range of interesting effects with which to chop and change your photos.

# Fragment

Not your everyday image filtering app

★★★★★

**£1.49 Developer** Pixite, pixiteapps.com

**Works with** iPhone, iPod touch, iPad **Version** 1.7



Fragment is an unusual entry into the cornucopia of photo filter apps. Rather than making your images look like they've been left in a mouldy biscuit tin for 40 years, it uses a geometric shape to split and duplicate the shot, creating a kind of double exposure.

Flicking up the menu allows you to switch the shape you're playing with, as well as brightness, contrast, glow colour and even a stereoscopic 3D effect. It's the sort of thing you could spend hours playing with, and while it will repay the time you invest in it, sometimes the best results come from a simple application of the prism-like shards the app is capable of generating.

The effects are certainly striking, but a lot rests on choosing the right combination of filter and base image. Once you've found something that might work, you can zoom and rotate the inset image with your fingers before tapping an arrow to either share your creation or

run it back through the app to apply a different filter.

The decision to use a swipe up from the bottom of the screen to open the filter menu is an odd one, as it's quite possible to open iOS's Control Center instead. Otherwise, Fragment has an intuitive interface that's speedy to operate.

New in this version is the ability to edit videos – as long as you're using iOS 8. This works perfectly smoothly but is perhaps best saved for short sequences rather than a whole wedding video.

Fragment isn't something you're going to want to apply to every photo you take. However, with the right image you can certainly create something special with it.

**Ian Evenden**



*Fragment is a unique image-editing app that may have limited applications but will always turn up something new.*

# VIDEOSOAP

Scrub up bad audio recordings

★★★★★

**£18.99 Developer** Soundness Corporation, soundness-llc.com

**Works with** iPhone, iPod touch, iPad **Version** 4.0.3



Good sound is just as important as what's on the screen. We may

have little control over our surroundings when shooting with an iPhone, so VideoSoap helps scrub out unwelcome background noise.

VideoSoap removes hiss or noise, brightens up the overall sound, and fixes poor volume levels. It accomplishes the first task by intelligently analysing the sound you don't want, such as an air conditioner or traffic noise. As a clip plays, tap and hold Learn for a few seconds during the offending section and the app applies a

filter to reduce or completely remove it from the entire clip.

Enhance and Boost sliders restore sparkle to dull audio, adjust low volume levels, or fix clipping on overly loud tracks. The results are quite spectacular and very easy to accomplish, but headphones are recommended. Video, along with cleaned audio, is copied to a new file with no quality loss. **J.R. Bookwalter**



*VideoSoap works magic on poor recordings, but it needs updating for Retina displays and the iPhone 6.*

# TOGETHERA

Private sharing sans Facebook

★★★★★

**Free Developer** GVL, togetherra.com

**Works with** iPhone, iPod touch, iPad **Version** 2.12



With Facebook you can create lists of people with whom you share different kinds of news, but Togethera – which lets you create dedicated private groups to share news among family and close friends – goes one further. Generally, it works very well both as a mobile app and a website, though for specifically sharing baby, child or family news, 23snaps (see MF290) is superior and more mature.

Updates can be shared to one or more groups, or via the standard Share sheet. There's a Watch app too, though it

perhaps tries to do too much, and there are Premium subscriptions for auto-backup to services including Dropbox.

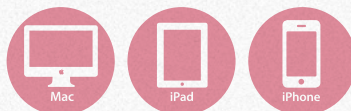
Despite being at version two, everything still feels a bit new; there's no support FAQ, though there is an email address. We're less confident about logistical things such as data portability and closing accounts than with 23snaps.

**Christopher Phin**



*A good option for sharing news to small, private groups if Facebook makes you uncomfortable.*





# UPGRADE!

Your guide to buying a Mac, iPad, iPhone, Watch and Apple TV

## SPOTLIGHT

The Apple kit we're most excited about



As expected, Apple unveiled an all-new Apple TV, with a clever remote, at the September event that also brought us the iPhone 6s and 6s Plus and iPad Pro. Apple TV hadn't been updated since 2012, so it was more than overdue. Luckily, it's been well worth the wait. It's no longer just a great place to watch TV and show off your photos on the big screen, as it now supports apps and games to make it a proper entertainment hub.

*The new Apple TV has moved beyond its film and TV origins*

## Remote viewing

The real headline grabber of the Apple TV is its Siri Remote, which is akin to the Wii remotes used by Nintendo, but far more sleek and compact-looking.

## Apple TV

### DAYS SINCE REFRESH

6

### UPDATE LIKELY?

Recently updated

### BUY OR WAIT?

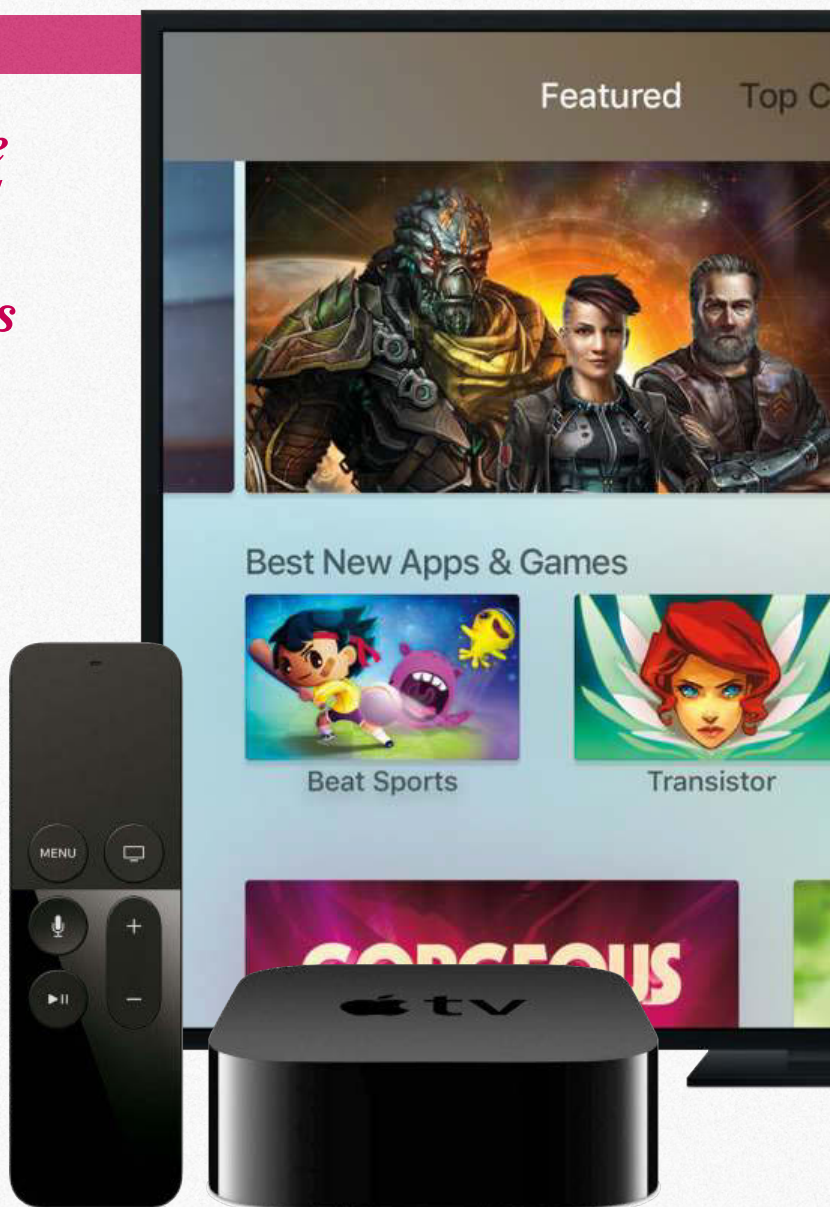
Buy now

➤ Eight years after the Apple TV came into our homes, it has finally been given an App Store. We can hardly recall a time when our iOS devices didn't have one, so it's good to see the humble black box getting a way to add content beyond TV, film and music. You can at last install apps that turn your TV into a place to catch up on news, sports results and even do some shopping. If it's games you're into, Apple TV is also a console with a clever remote that gives you motion control via a gyroscope and an accelerometer, just like your iPhone.

The top area of the remote is dedicated to touch, meaning you can control your

Apple TV like never before. So it's all gesture-based; tap and swipe your way through menus and use it as a scrubber for speeding through video. There's Siri in the new Apple TV too, which looks very clever at responding to natural language queries.

The Days Since Refresh box shows you when an Apple product was last updated at the time we went to press, and whether it's safe to buy now or wait. Please remember this advice is just our best guess – Apple can update any product line at any time.



## CHOOSE AN APPLE TV

Model	Key specifications	Price
Apple TV (3rd-generation)	Processor: single-core A5 Connectivity: HDMI, IR receiver, 10/100BASE-T Ethernet, micro-USB (for service only)	£59
Apple TV (4th-generation)	Processor: dual-core A8 Connectivity: HDMI 1.4, IR receiver, Bluetooth 4.0, 10/100BASE-T Ethernet, USB-C (for service only)	32GB: TBC 64GB: TBC





## MacBook

**DAYS SINCE REFRESH**

**190**

**UPDATE LIKELY?**

New model

**BUY OR WAIT?**

Buy now

➤ The newest member of the Mac family sports a 12-inch Retina display with a pixel density of 226ppi – almost identical to the MacBook Pro. It's available in the same silver colour as other MacBooks, as well as Gold and Space Grey variants.

Only this and the MacBook Pro feature a Force Touch trackpad, which detects and responds differently to levels of pressure. The backlit keys are larger than on other Macs, and run almost from edge to edge of the MacBook's body.

The MacBook is powered by Intel's new Core M processors (up to 1.3GHz),

which are designed to stay cool without needing a fan, making this the quietest portable Mac. All models come with 8GB of RAM – double the amount that's standard on the MacBook Air – but can't be upgraded any further than that. They also include fast flash storage that starts at a comfortable capacity of 256GB, rising to 512GB in the more expensive version. The 1.3GHz processor upgrade is available on both models for between £120 and £200.

### CHOOSE A MACBOOK

Model	Key specifications	Price
12" 1.1GHz dual-core Intel Core M	RAM: 8GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 5300 Solid State Drive: 256GB	£1,049
12" 1.2GHz dual-core Intel Core M	RAM: 8GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 5300 Solid State Drive: 512GB	£1,299
12" 1.3GHz dual-core Intel Core M	RAM: 8GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 5300 Solid State Drive: 256GB or 512GB	£1,249 or £1,419

**R** = Retina display



## MacBook Air

**DAYS SINCE REFRESH**

**190**

**UPDATE LIKELY?**

Recently updated

**BUY OR WAIT?**

Buy now

➤ The 2015 MacBook Air refresh is a mere speed bump, yet even with the announcement of a new, lighter MacBook, the Air remains Apple's most affordable portable Mac.

The MacBook Air uses Broadwell processors, which are designed to use very little power. The 2015 range's updated graphics chipset is a small amount faster than its predecessor, and its flash storage can reach speeds in excess of 1,000 megabytes per second, which is in the same league as the Mac Pro. The MacBook Air is equipped with 802.11ac Wi-Fi, which is up to

three times quicker than 802.11n, although you will need a compatible router to get that speed. Battery life is awesome, with the 13-inch models lasting up to 12 hours, and the 11-inch Airs running for up to nine hours on a single charge.

### CHOOSE A MACBOOK AIR

Model	Key specifications	Price
11" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 128GB	£749
11" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 256GB	£899
13" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 128GB	£849
13" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 256GB	£999



# UPGRADE!



## MacBook Pro

**DAYS SINCE REFRESH**

**119**

**UPDATE LIKELY?**

Recently updated

**BUY OR WAIT?**

Buy now

➤ Apple recently updated the Retina MacBook Pro with a brand-new Force Touch trackpad, small boosts to their Intel processors, and upgraded graphics capabilities. The most expensive model is the only one with a discrete graphics processor, which is now an AMD Radeon R9 M370X.

Since October 2013, all but one model of MacBook Pro has offered a Retina display, Thunderbolt 2, flash storage and a lightweight chassis, though the £899 non-Retina model persists. Power savings afforded by the latest Intel processors give the Retina

MacBook Pros a long battery life. The 13-inch model now lasts for 10 hours, and the 15-inch versions for nine hours.

### CHOOSE A MACBOOK PRO

Model	Key Specifications	Price
13" 2.5GHz dual-core i5	Graphics: Intel HD Graphics 4000 Hard drive: 500GB RAM: 4GB	£899
13" 2.7GHz dual-core i5	Graphics: Intel Iris 6100 Graphics <sup>R</sup> Solid State Drive: 128GB RAM: 8GB	£999
13" 2.7GHz dual-core i5	Graphics: Intel Iris 6100 Graphics <sup>R</sup> Solid State Drive: 256GB RAM: 8GB	£1,199
13" 2.9GHz dual-core i5	Graphics: Intel Iris 6100 Graphics <sup>R</sup> Solid State Drive: 512GB RAM: 8GB	£1,399
15" 2.2GHz quad-core i7	Graphics: Intel Iris Pro Graphics <sup>R</sup> Solid State Drive: 256GB RAM: 16GB	£1,599
15" 2.5GHz quad-core i7	Graphics: AMD Radeon R9 M370X <sup>R</sup> Solid State Drive: 512GB RAM: 16GB	£1,999

<sup>R</sup> = Retina display



## iMac

**DAYS SINCE REFRESH**

**334**

**UPDATE LIKELY?**

Early 2016?

**BUY OR WAIT?**

Wait if you can

➤ Apple leapt straight to 5K to make the 27-inch Retina 5K iMac the desktop computer to own. In May 2015, Apple reduced the top model's price by £150; it has a 3.5GHz quad-core Intel Core i5 (there's a 4.0GHz Core i7 option), a 1TB Fusion Drive, 8GB of RAM and an AMD Radeon R9 M290X with 2GB video memory. At the same time Apple updated the mid-range 27-inch with a Retina 5K display and new graphics processor. Other models are unchanged, with one non-Retina 27-inch and three 21.5-inch models. All except the entry-level iMac have a quad-core processor.

### CHOOSE AN iMAC

Model	Key specifications	Price
21.5" 1.4GHz dual-core Intel Core i5	Hard drive: 500GB (5400rpm) Graphics: Intel HD Graphics 5000 Graphics memory: Shared	£899
21.5" 2.7GHz quad-core Intel Core i5	Hard drive: 1TB (5400rpm) Graphics: Intel Iris Pro Graphics memory: Shared	£1,049
21.5" 2.9GHz quad-core Intel Core i5	Hard drive: 1TB (5400rpm) Graphics: NVIDIA GeForce GT 750M Graphics memory: 1GB of GDDR5	£1,199
27" 3.2GHz quad-core Intel Core i5	Hard drive: 1TB (7200rpm) Graphics: NVIDIA GeForce GT 755M Graphics memory: 1GB of GDDR5	£1,449
Retina 5K 27" 3.3GHz quad-core i5	Hard drive: 1TB (7200rpm) <sup>R</sup> Graphics: AMD Radeon R9 M290 Graphics memory: 2GB of GDDR5	£1,599
Retina 5K 27" 3.5GHz quad-core i5	Hard drive: 1TB Fusion Drive <sup>R</sup> Graphics: AMD Radeon R9 M290X Graphics memory: 2GB of GDDR5	£1,849

<sup>R</sup> = Retina display





## Mac mini

**DAYS SINCE REFRESH**

**364**

**UPDATE LIKELY?**

Mid 2016?

**BUY OR WAIT?**

Buy now

➤ The smallest Mac in Apple's range finally got a long-awaited update in October. It's a welcome update, but there have been a few odd choices in the components as well. Starting at a new lower price of £399 (£100 cheaper than the previous model), it's still the same shape as before, but with some more modern internals.

It starts with a 1.4GHz Intel Core i5 dual-core processor with Intel HD 5000 graphics, 4GB of RAM and a 500GB hard drive – pretty much the entry-level iMac without a screen. It's the same kind of power as you get in a

MacBook Air, but without the zippiness of flash memory.

Higher end models bring Intel Iris graphics and the option for a Fusion Drive hybrid storage system, though every option limits you to dual-core processors – a quad-core option is sadly absent. When stepping up to the high-end model (£230 more than the previous model), you get a 2.8GHz Core i5, 8GB of RAM, Intel Iris graphics and a 1TB Fusion Drive, offering more headroom for tasks such as video editing, but it still needs to be accepted that these aren't powerhouses like some other Macs.

### CHOOSE A MAC MINI

Model	Key specifications	Price
1.4GHz dual-core Intel Core i5	Hard drive: 500GB RAM: 4GB 1600MHz LPDDR3 Graphics: Intel HD Graphics 5000	£399
2.6GHz dual-core Intel Core i5	Hard drive: 1TB RAM: 8GB 1600MHz LPDDR3 Graphics: Intel Iris Graphics	£569
2.8GHz dual-core Intel Core i5	Hard drive: 1TB RAM: 8GB 1600MHz LPDDR3 Graphics: Intel Iris Graphics	£799



## iPhone

**DAYS SINCE REFRESH**

**6**

**UPDATE LIKELY?**

Recently updated

**BUY OR WAIT?**

Buy now

➤ The iPhone 6s and 6s Plus introduce the first new method of interaction since the touchscreen: 3D Touch. It's essentially the same Force Touch sensation found in the Apple Watch and recent MacBooks. In iOS 9 on these iPhones, you access shortcuts through a deep press on the screen. For example, you can 'peek' at a message in Mail to preview its content, and 'pop' it open to deal with it.

The 12 megapixel camera gives you the best ever iPhone shots. The 6s Plus still has the upper hand here with its optical image stabilisation.

Meanwhile, the 6 and 6 Plus enjoy a price drop and the 5s is now under £400 off contract, and free on many contract deals.

### CHOOSE AN IPHONE

Model	Key specifications	Price
iPhone 5s	Processor: A7+M7 Camera: 8-megapixel Video: 1080p, 30fps/720p, 120fps	<b>R</b> 16GB: £379 32GB: £419
iPhone 6	Processor: A8+M8 Camera: 8-megapixel Video: 1080p, 60fps/720p, 240fps	<b>R</b> 16GB: £459 64GB: £539
iPhone 6 Plus	Processor: A8+M8 Camera: 8-megapixel Video: 1080p, 60fps/720p, 240fps	<b>R</b> 16GB: £539 64GB: £619
iPhone 6s	Processor: A9+M9 Camera: 12-megapixel Video: 4K at 30fps/1080p, 30/60fps	<b>R</b> 16GB: £539 64GB: £619 128GB: £699
iPhone 6s Plus	Processor: A9+M9 Camera: 12-megapixel Video: 4K at 30fps/1080p, 30/60fps	<b>R</b> 16GB: £619 64GB: £699 128GB: £789

**R** = Retina display





## iPad

**DAYS SINCE REFRESH**

6

**UPDATE LIKELY?**

9.7-inch in 2016?

**BUY OR WAIT?**

Buy now

➤ The iPad Pro stole the show at Apple's September event in San Francisco. It's an incredible tablet – turn to page 10 to read all about it. As for the 'normal' iPad lineup, little has changed apart from the introduction of the iPad mini 4, a direct replacement for the iPad mini 3 – which finally puts the 7.9-inch iPad on par with the full size model again.

That's good news in iOS 9, because both sizes of iPad can take advantage of its new (iPad-only) multitasking features, enabling you to slide a second app into view (say, to check email) without leaving the one you're working

in. The iPad Air 2 and iPad mini 4 also have Split View mode, which enables you to work in two apps side-by-side. Those two models also feature Touch ID, Apple's fingerprint sensor.

### CHOOSE AN iPad

Model	Key specifications	Price
iPad mini 2 Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels <b>R</b> Processor: 64-bit A7+M7 Video recording: 1080p HD	16GB: £219 32GB: £259
iPad mini 4 Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels <b>R</b> Processor: 64-bit A8+M8 Video recording: 1080p HD	16GB: £319 64GB: £399 128GB: £479
iPad Air Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels <b>R</b> Processor: 64-bit A7+M7 Video recording: 1080p HD	16GB: £319 32GB: £359
iPad Air 2 Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels <b>R</b> Processor: 64-bit A8X+M8 Video recording: 1080p HD	16GB: £399 64GB: £479 128GB: £559

**R** = Retina display



## Apple Watch

**DAYS SINCE REFRESH**

144

**UPDATE LIKELY?**

Not until 2016

**BUY OR WAIT?**

Buy now

➤ Apple Watch just got watchOS 2 to go with iOS 9 on the iPhone. To accompany the update Apple has released some changes to the Watch line-up, although no new editions have been introduced; it's still Sport, Watch and Edition you can choose from.

The biggest changes to the line-up are at the Sport end of things, as you might expect when they are the most affordable. Alongside the silver and black aluminium versions, you can now order Gold and Rose Gold watches (which have matte finishes as opposed to shiny ones). There's a range of new

Sport Bands to go along with the new Sport watches, including two versions of white! A Product(RED) band also joins the lineup.

### CHOOSE A WATCH

Model	Key Specifications	Price
Apple Watch Sport (38mm)	Cases: Silver, Gold, Rose Gold, Space Grey Aluminium	£299
Apple Watch Sport (42mm)	Cases: Silver, Gold, Rose Gold, Space Grey Aluminium	£339
Apple Watch (38mm)	Cases: Stainless Steel, Space Black	£479
Apple Watch (42mm)	Cases: Stainless Steel, Space Black	£519
Apple Watch Edition (38mm)	Cases: 18-Carat Rose Gold, 18-Carat Yellow Gold	£8,000
Apple Watch Edition (42mm)	Cases: 18-Carat Rose Gold, 18-Carat Yellow Gold	£9,500



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*Gary Marshall goes panning in the river of rumour for nuggets of knowledge*

## Apple wireless earbuds



It's safe to say that Apple's earbuds have their critics. Some people reckon they sound rubbish; others, that they fall out too easily, making them useless for exercising. And some people, such as your humble correspondent, find them

excruciatingly uncomfortable. Recently revealed patents show that Apple might be addressing all of those things, and adding some additional good ideas too.

In US Patent Application 20150245129, filed last year, Apple described a "System and method of improving voice quality in a wireless headset with untethered earbuds of a mobile device". The earbuds – which would be wireless, connecting via Bluetooth – would use sensors to monitor the user's voice, the ambient noise around them and noises such as wind, and then they would adjust the sound to compensate. It's rather like noise-cancelling circuitry but a lot more detailed.

That's not the only thing Apple wants to stick in your ears. Twin patents filed in late 2012, "Ear Presence Detection in Noise Cancelling Earphones" and "Electronic Devices and Accessories

with Media Streaming Control Features", describe sensors that can tell whether they're in your ear or out, starting and stopping playback accordingly to ensure you don't waste power on playing things you aren't listening to. Apple has also been granted a patent for a "Sports monitoring system for headphones, earbuds and/or headsets", biometric headphones that can detect your body temperature, your heart rate and even how much you're sweating. Apple patent applications on earbud-based health sensors date back to 2007, which shows just how long the company has been thinking about all of this.

Of course, there's no point in stuffing earbuds full of sensors if they fall out too easily or if they are so uncomfortable that you don't want to wear them. That's where US Patent Application US20140076657, "Invertible Ear Tips for an Ear Piece", comes in. In the filing, Apple details how a 'compliant element operative' could be inserted in your ear "such that the compliant element deforms to retain the ear piece in the user's ear." In plain English, that means the earbuds would have a bendy bit so they don't fall out. That sounds like a good idea to us.



There's no point in stuffing earbuds full of sensors if they fall out easily or they're too uncomfortable to wear.



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